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combines the following features, which are vitally essential to efficient, economical operation:

★ **Maximum expansion range on cutter blades (from 4" to 36" expansion using only six bodies)**

★ **Blades that contact side of the hole a sufficient distance to give good bearing surface on formation (minimizes possibility of "corkscrewing" hole; assures an even cut on all sides of the hole and permits faster downward feeding with more hole per hour)**

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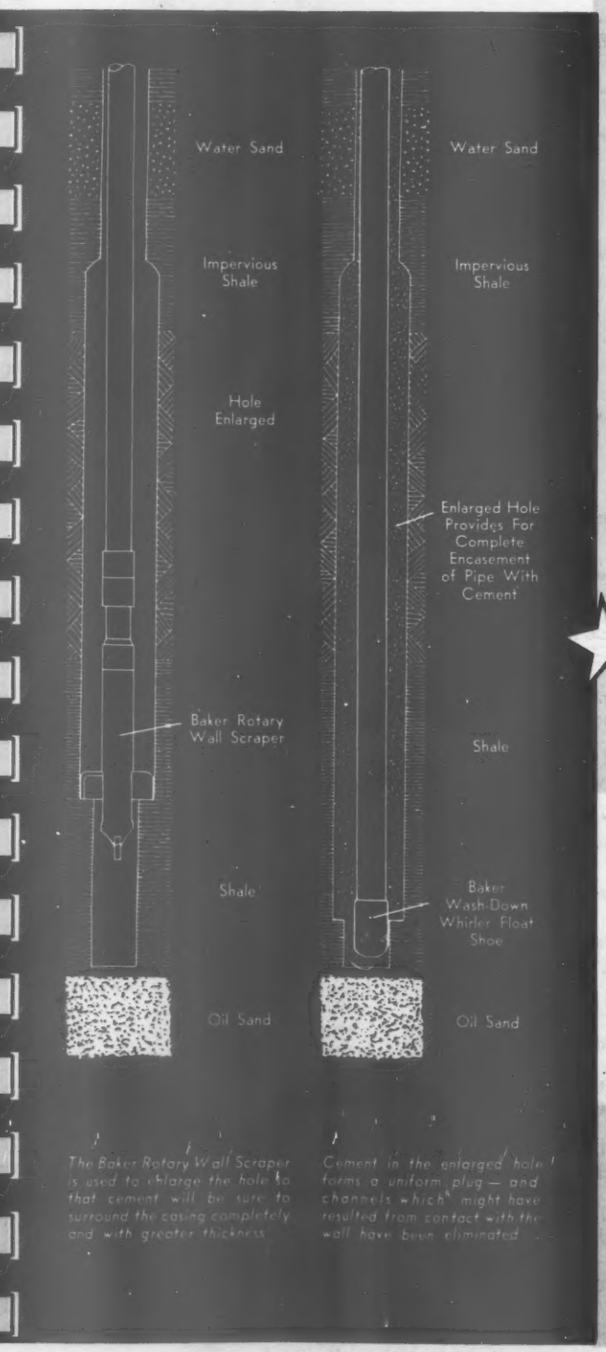

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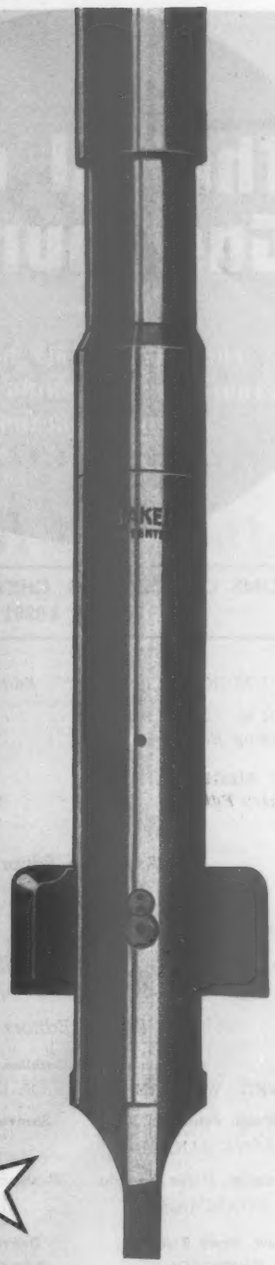

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BAKER ROTARY WALL SCRAPER

BAKER OIL TOOLS, INC.
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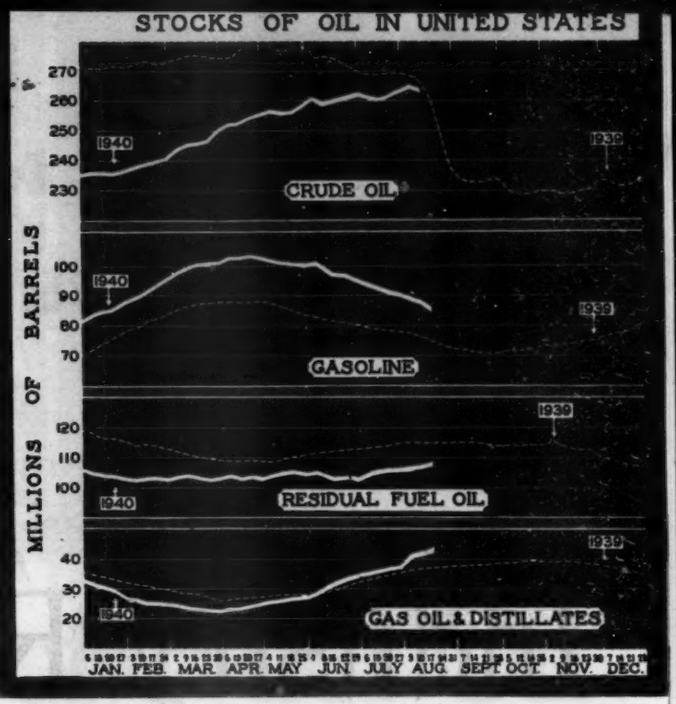
Trends

Crude Price in Illinois Advanced; September's Demand Remains High



THE advance of 10 cents in Illinois, lifting the top crude posting in basin fields to $1.15, effective August 21, confirmed the belief that declining production in that state would be interpreted in higher prices. Firm fuel-oil markets and early development of inquiries from the large consuming areas tempered the realization this week that the last big bulge of summer gasoline demand soon will have passed.

CRUDE PRODUCTION *3,530,643 bbl. daily average—up 38,562 bbl. One year ago 2,097,147 bbl.*

CRUDE STOCKS *263,607,000 bbl. as of August 10—down 690,000 bbl. One year ago 267,536,000 bbl.*

GASOLINE STOCKS *86,441,000 bbl. as of August 17 — down 1,674,000 bbl. One year ago 75,000,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *107,935,000 bbl. as of August 17 — up 334,000 bbl. One year ago 115,578,000 bbl.*

GAS OIL AND DISTILLATES *42,869,000 bbl. as of August 17—up 1,492,000 bbl. One year ago 36,520,000 bbl.*

REFINERY RUNS *3,510,000 bbl. daily week ended August 17—up 75,000 bbl. One year ago 3,575,000 bbl.*

The Bureau of Mines estimate that September crude demand will be 3,624,300 bbl. daily, is less than 1 per cent below August.

Fuel oil this coming winter must carry multiple burdens. In the first place refinery operating profits must come essentially from fuel oil, a role filled above expectations in the first quarter. The final quarter demands performance from fuels at least equal to that of the first 3 months to offset the summer-long depression of gasoline prices. Fuel-oil prices declined only about 1 cent per gallon in the off consuming season from their peak of the past winter.

Jobbers are now scanning the market for light fuel oil obtainable at current prices which can be held in storage for the few weeks remaining until active winter demand develops. Supplies available to spot-market buyers are strictly limited to refineries where a complete turnover of stocks at frequent intervals is essential to prevailing economics.

Inland refiners believe that current quotations for light fuel oil would move forward promptly if suppliers were willing to ship sufficient material to make an active market. The Gulf market is an exception. Coastal refiners report subnormal interest in light fuels.

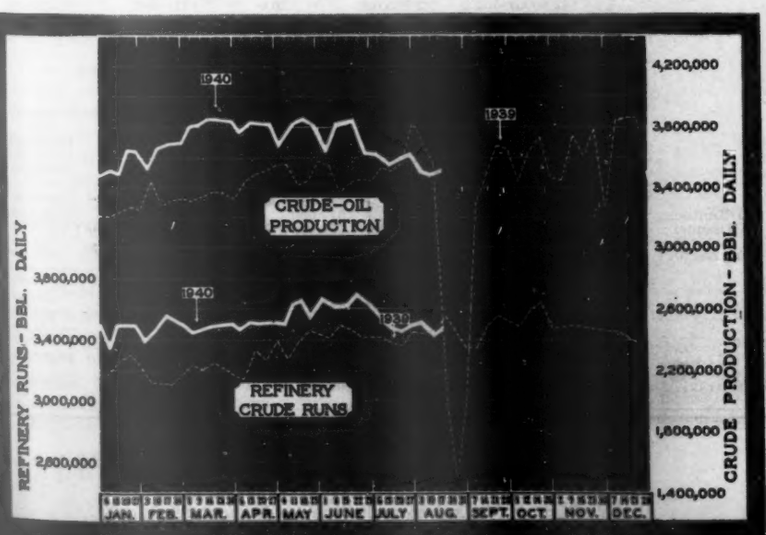
The industry faces the fuel-oil season with stocks almost 50 per cent greater than last year but an increase of 20 per cent in the number of burners in operation partially offsets the more abundant supplies. Furthermore, there is the virtual certainty that industrial consumption will rise to an all-time record in pace with the defense program.

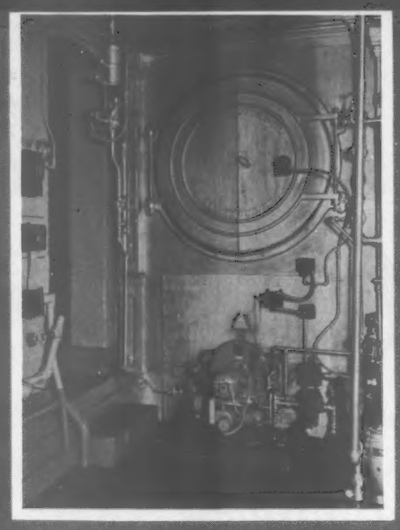
Refinery operations dropped below the 1939 level for the first time this year in the week ended August 10, indicating that runs to stills are being tapered off at least 30 days before the sharp fall contraction of motor-fuel demand.

Crude-oil production again rose above the 1939 curve after ranging on the down side for 3 weeks. The change in comparative positions of crude production is abrupt but sharpness of the reversal is due to the shutdown in southwestern producing states in the last half of August a year ago, rather than to any singular deflection of current trends. Crude stocks changed their course of recent weeks, dipping 960,000 bbl., which may be translated later into increased refining activity.

DAILY AVERAGE PRODUCTION FOR WEEK

	Aug. 17, 1940	Bur. Mines Aug. est. of demand	Aug. state allowables	Aug. 10, 1940
Arkansas	73,610	65,200	73,000	73,075
California	635,250	598,400	587,000	637,850
Eastern states	103,400	102,900	.....	103,700
Illinois	392,700	440,600	.....	395,950
Kansas	187,000	166,800	170,607	169,150
Louisiana	278,410	276,100	274,620	281,410
North Louisiana	*64,160*	.....	.....	*65,060*
Louisiana Gulf Coast	*214,250*	.....	.....	*216,350*
Michigan	54,246	57,100	52,000	54,143
Mississippi	14,290	10,300	.....	11,033
New Mexico	101,840	105,200	102,000	106,570
Oklahoma	402,475	402,600	390,000	391,425
Rocky Mountain states	94,984	106,100	.....	92,296
Texas	1,192,438	1,326,400	1,164,943	1,175,895
East Texas	*374,896*	.....	.....	*374,948*
West Texas	*194,250*	.....	.....	*192,398*
North Central Texas	*120,200*	.....	.....	*117,997*
Texas Panhandle	*65,798*	.....	.....	*63,396*
East Central Texas	*71,947*	.....	.....	*68,496*
Gulf Coast Texas	*280,397*	.....	.....	*279,600*
Southwest Texas	*84,950*	.....	.....	*79,150*
United States	3,530,643	3,657,700	.....	3,492,081





Industry Ready for Peak

By H. STANLEY NORMAN

THE petroleum industry is better qualified this year to meet the enigmatic conditions of the high fuel-oil consuming season which lies just ahead. Demand is certain to reach an all-time peak despite the decline of 27 per cent in the exportation of all fuel oils in the first half of the year. The fuel-oil season, normally considered from September 1 to April 1, will open with a backlog of 45,000,000 bbl. of gas oil and distillate fuel in the stock tanks of the petroleum industry. The light-fuel-oil reserves will be approximately 50 per cent greater to meet the demand this year than at the start of the 1939-40 burning season.

The refiners' dilemma of last winter of how to supply fuel-oil requirements without unreasonable additions to motor-gasoline stocks may be absent this year or at least cushioned by preparation in conjunction with depressed export demand.

The various grades of fuel oil, while serving distinct functions in power production, are intimately related from a refinery-operating standpoint. Domestic demand for the three general grades of fuel for the 7 consuming months in 1939 and 1940 was (data in barrels):

Month—	Gas oil	Kerosene	Residual fuel
September	9,271,000	4,638,000	26,514,000
October	11,365,000	5,019,000	28,475,000
November	12,433,000	6,023,000	29,519,000
December	16,280,000	6,613,000	30,722,000
January	22,787,000	7,842,000	32,148,000
February	17,930,000	6,263,000	26,816,000
March	16,494,000	6,273,000	30,881,000
Total	106,560,000	42,671,000	205,075,000

If distillate-fuel-oil demand increases 12 per cent, which is considered conservative by some analysts, new supply necessary this winter will be in the vicinity of 121,662,000 bbl., allowing for withdrawal of 20,000,000 bbl. from storage. To manufacture 121,662,000 bbl. of light fuel oils at the 1939 average refinery yield will require processing of 921,600,000 bbl. of crude. Carrying the theoretical projection still further, the running of 921,600,000 bbl. of crude to average yield of 44.73 per cent gasoline, as in 1939, would produce 412,296,410 bbl. of motor fuel in the 7 months from September 1 to April 1. In the past 7 winter months the domestic gasoline demand was 312,537,000 bbl., and exports totaled 19,813,000 bbl. Total motor-fuel demand from September 1, 1939, to April 1, 1940, was 332,350,000 bbl. If motor fuel is produced this coming winter on the basis of 44.73 per cent yield and refineries are operated on a schedule of recovering 121,662,000 bbl. of light fuels to meet the prospective domestic demand there will be 79,946,000 bbl. of motor fuel above the actual 1939-40 demand. The motor-fuel-supply increase would amount to 24 per cent, which would have to be absorbed by higher consumption or added to storage.

Factors Pointing to Peak Season

Two principal factors, related indirectly, point to an unprecedented peak in fuel-oil consumption this coming winter. Current market and refinery operations reflect the outlook for record-breaking fuel-oil demand. Statistics reveal the extent of preparation made by the industry to meet the fuel-oil demand. Shipments of oil burners through the first 6 months set a new 3-year high, indicating an increase of approximately 20 per cent in the number of units that will be in operation at the end of the calendar year. Fuel-oil consumption by industry will climb to a new high in this country through power requirements in prosecution of the defense program.

In general, the increase in oil-burner shipments is interrelated with the defense program, although reports from the Bureau of Census show that home installations of fuel-consuming heating units continue on an uninterrupted scale.

Shipments of oil burners by manufacturers in June totaled 18,387 units, compared with 17,829 in May; 16,906 in June 1939; and 9,550 in June 1938. For the first 6 months shipments totaled 87,865, against 69,638 in 1939 and 45,343 in 1938. Indications are that approximately 2,285,000 fuel-oil burners will be in service at the end of this year, an increase of 20 per cent as shown in Table 1. Distillate-burner shipments, units consuming range oil or lighter fuels, totaled 148,704 the first 6 months.

Since the end of March, when distillate-fuel-oil stocks reached the low mark of the winter, 23,086,000 bbl., as shown in Table 2, the petroleum industry has added more than 18,000,000 bbl. to storage, an average of about 4,000,000 bbl. per month.

Part of the stock accumulation has been possible by maintaining the average distillate-fuel-oil yield at 14.45 per cent of crude charged by refineries against 13.63 per cent for the first 6 months of 1939, and 12.8 per cent in the last half. The relatively high yield of light fuel oils was maintained at the expense of residual fuel and gasoline, details of which are shown by products in Table 3.

TABLE 1—LIGHT-FUEL INVENTORIES, NUMBER OF BURNERS, DEMAND

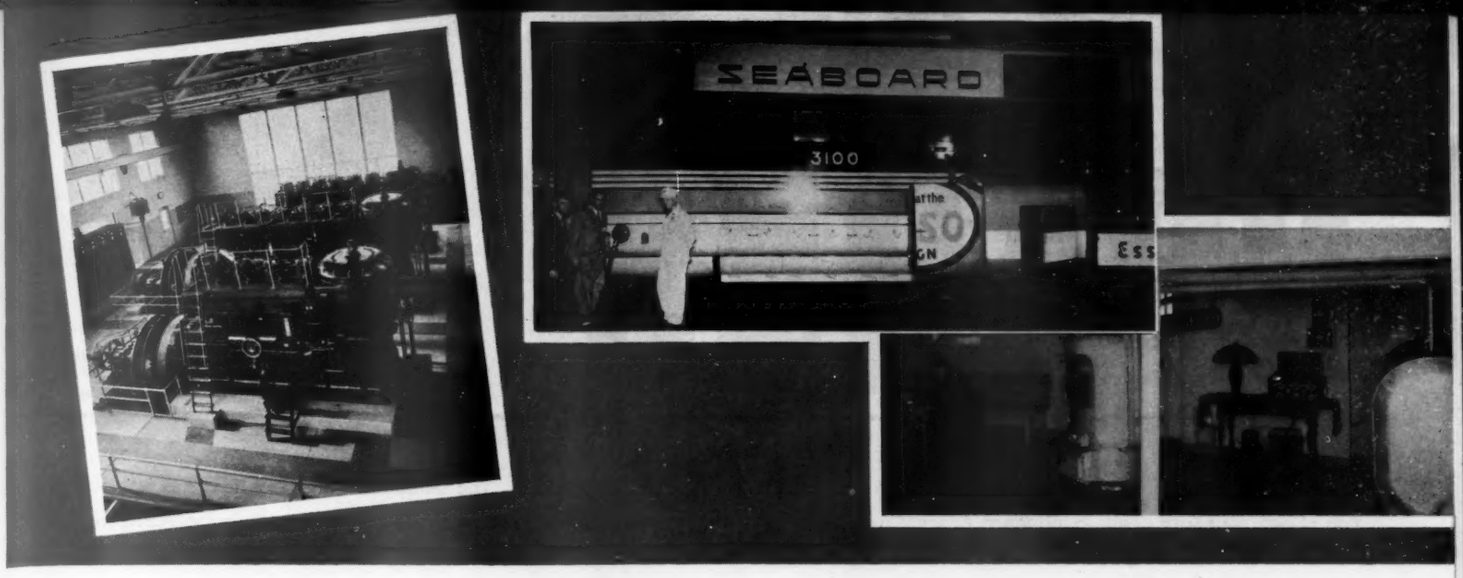
Year—	September 30 gas-oil and distillate-fuel inventories (bbl.)	Number of home-heating oil burners: Units in use end of year	Number of home-heating oil burners: Per cent increase	Domestic demand (bbl. dly.)	Total domestic gas-fuel oil demand (bbl. dly.)
1935	24,272,000	1,155,000	13.9	235,700	1,004,700
1936	27,871,000	1,356,000	17.4	280,300	1,122,000
1937	27,020,000	1,544,000	13.9	320,100	1,211,900
1938	30,860,000	1,658,000	7.4	321,800	1,115,900
1939	30,018,000	1,905,000	14.9	380,300	1,268,200
1940	*42,000,000	†2,285,000	20.0	‡477,000	‡1,395,000

*Estimated as of August 15. †Estimated from first 6 months' shipments. ‡First 6 months.

TABLE 2—STOCKS OF GAS OIL AND DISTILLATE

(In barrels)

District—	March 31, 1939	September 30, 1939	March 31, 1940	August 10, 1940
East Coast	2,635,000	6,400,000	5,683,000	14,939,000
Louisiana Gulf	787,000	840,000	631,000	1,247,000
Texas Gulf	3,227,000	6,076,000	3,306,000	6,460,000
6,649,000	*13,316,000*	*9,620,000*	*22,646,000*	
Indiana, Illinois and Kentucky	1,926,000	3,917,000	2,452,000	5,213,000
Oklahoma, Kansas, Missouri	1,122,000	1,787 000	881,000	1,692,000
Inland Texas	273,000	363,000	128,000	551,000
North Louisiana-Arkansas	186,000	214,000	125,000	330,000
3,507,000	*6,281,000*	*3,586,000*	*7,786,000*	
Appalachian	184,000	214,000	312,000	470,000
Rocky Mountain	215,000	227,000	266,000	274,000
East of California	*10,555,000*	*20,038,000*	*13,784,000*	*31,176,000*
California	9,560,000	9,980,000	9,302,000	10,201,000
Total United States	20,115,000	30,018,000	23,086,000	41,377,000



Consumption of Fuel Oil

TABLE 3—PER CENT YIELD FROM CRUDE OIL, 6 MONTHS, 1940

Month—	Gasoline	Residual fuel	Distillate fuel
January	42.9	26.4	15.5
February	42.4	24.3	16.0
March	42.2	24.4	14.8
April	43.0	23.7	14.3
May	42.3	23.8	13.0
June	43.1	23.5	13.1
Average	42.65	24.35	14.45
Per Cent Yield From Crude Oil, 1939			
January	42.9	26.4	15.5
February	45.0	24.5	14.6
March	44.4	25.3	13.7
April	44.8	24.9	13.4
May	44.4	25.6	11.7
June	44.5	23.7	12.9
Average 6 months	*44.33*	*25.07*	*13.63*
July	44.5	24.0	11.9
August	45.1	23.5	12.3
September	45.1	24.9	12.3
October	45.3	24.9	13.5
November	45.8	24.9	13.1
December	45.0	25.5	13.6
Average last half	45.13	24.6	12.8

Aiding in the additions to domestic fuel-oil stocks has been the decline in exports. Foreign shipments of light fuel oil for the first 6 months this year declined 29 per cent; kerosene dropped 43.8 per cent and residual fuels were down 17 per cent. Combined exports of residuals, distillate fuels and kerosene are running 27 per cent lower this year than in 1939.

There is no tangible evidence that the first-half trend in petroleum exports, as shown in Table 5,

TABLE 5—GAS-OIL AND RESIDUAL-FUEL EXPORTS

(In barrels)

Year—	Gas oil and distillate fuel	Residual fuel oil	Total
1935	16,249,000	12,699,000	28,948,000
1936	20,448,000	14,435,000	34,883,000
1937	30,129,000	15,304,000	45,433,000
1938	29,641,000	17,920,000	47,561,000
Six months, 1938	*15,446,000*	*8,077,000*	*23,523,000*
1939	32,021,000	17,490,000	49,511,000
Six months, 1939	*15,918,000*	*9,377,000*	*25,295,000*
Six months, 1940	*11,326,000*	*7,710,000*	*19,036,000*

will be changed during remainder of the year, or for that matter until the European war is terminated. Statisticians, therefore, estimate that fuel-oil exports for the entire year will decline 25 to 30 per cent from the 1939 total. A decline of 27 per cent in total fuel-oil exports, including kerosene, distillate fuels and residuals, will cut 15,500,000 bbl. from that consumptive channel and will, theoretically, increase the domestic supply by the same amount.

There is no visible ceiling to the almost phenomenal growth of fuel-oil demand, particularly in the distillate class of products. Approximately 75 per cent of the distillate fuel oils are consumed in central heating plants of private homes, institutions and commercial buildings.

Preponderantly important as is the consumption of distillate fuels for heating purposes, utility of such products is spreading rapidly. Consumption by high-speed diesel engines is growing rapidly. Small high-speed diesels are now used in a multitude of rural services, including generation of electricity, powering pumps, saws and similar tools, and as fuel for the larger types of tractors.

Ranges and Heaters

Modern oil ranges used in regular cooking service in some rural districts, for camp and summer-home purposes and as space heaters in small rooms are a medium of consumption growing in importance. The oil ranges operate on a distillate fuel or on kerosene.

One of the most important consumers of distillate and residual fuels is the oil industry itself under field and refinery boilers and furnaces and in the operation of diesel engines in drilling and pipe-line services. There is no breakdown available to show what portion of the oil-burner sales may have gone into industrial services. There is the strong probability, however, which is given consideration by observers of fuel-oil data, that defense preparation may be partially responsible for the increased shipments of burners. The reasoning follows that industrial burners are likely to consume larger quantities of fuel oil than units in private home-heating service. Consequently, the higher burner shipments may represent a greater potential demand for fuel oil than the figures in Table 1 indicate.

One of the important questions now confronting refiners is whether the average yield of light fuel oil from crude processed last winter will be sufficient to meet the prospective demand. It appears probable that the industry can definitely count on receipts of foreign fuel oil at about the same rate prevailing in the first 6 months shown at 165,525 bbl. daily in a review of imports in this issue of The Oil and Gas Journal. There was an increase of 12.3 per cent in the 1939 demand for light fuel oil against 1938, but the real burden of supplying requirements last winter did not develop until the middle of January and extended through part of March. The abnormally high demand for light fuel during the first 3 months was one factor in the increase of 23 per cent in domestic demand. Severe temperatures ruled in all big consuming districts and this unknown factor will again play an important part in the final analysis of the 1940-41 season.

Related to the defense-program consumption of

(Continued on Page 41)

TABLE 4—KEROSENE DOMESTIC DEMAND, PRODUCTION, EXPORTS, STOCKS

(Thousands of barrels)

Month—	Domestic demand	Exports	Total demand	Stocks	Production	Per cent yield from crude
		1940				
January	7,842	191	8,033	4,918	5,375	5.04
February	6,263	298	6,561	4,302	5,945	5.84
March	6,273	485	6,758	4,114	6,570	5.96
April	5,621	399	6,020	4,351	6,257	5.84
May	5,297	386	5,683	5,309	6,641	5.93
June	3,952	332	4,284	6,810	5,785	5.34
Six months	35,248	2,091	37,339		36,573	5.66
Per cent change from 1939	+17.2	−43.8	+10.5	−10.1	+7.7	−0.7
		1939				
January	5,980	810	6,790	6,711	5,702	5.72
February	5,901	532	6,433	5,452	5,174	5.89
March	5,201	546	5,747	5,605	5,900	5.96
April	5,042	713	5,755	5,663	5,813	5.85
May	4,368	653	5,021	6,551	5,909	5.59
June	3,570	471	4,041	7,949	5,439	5.20
Six months	*30,062*	*3,725*	*33,787*	....	*33,937*	*5.70*
July	3,710	774	4,484	8,855	5,390	5.04
August	4,436	841	5,277	9,361	5,783	5.37
September	4,638	577	5,215	9,952	5,806	5.50
October	5,019	1,107	6,126	9,967	6,141	5.53
November	6,023	567	6,590	9,019	5,642	5.38
December	6,613	652	7,265	7,576	5,822	5.50
Total	60,501	8,243	68,744		68,521	5.54
1938	56,360	7,504	63,864	7,799	64,580	5.54
1937	54,972	8,886	63,858	7,083	65,308	5.52
1936	51,428	6,936	58,364	5,633	56,082	5.25
1935	47,645	6,651	54,296	7,915	55,813	5.78

SPARKS . . . FROM THE NEWS

NOT TO BE DENIED: Economies offered by pipe-line transportation of petroleum are likely to influence Argentina in building one of the major lines now in prospect for 1941.

A BURNING QUESTION: Will the industry's 45,000,000 bbl. of distillate fuels in prospect for October 1 be sufficient to meet demand along with modest production, or will huge gasoline reserves be piled up to muddle the 1941 motor-fuel market?

BIG SPENDER: Announcement of a $3,000,000 refinery and terminal expansion and modernization program on the East Coast this week typifies the boldness with which the industry meets its manufacturing requirements.

INCONGRUOUS: The increase of 75 per cent in imports of petroleum for domestic consumption for the first 7 months still leaves shippers 6,078 bbl. daily short of the reduced-tariff quotas assigned under terms of the Venezuelan trade agreement.

BODY BLOW: If reports are correct that the Leuna synthetic-gasoline plant in Germany has been seriously damaged or destroyed are correct, it would be a serious thrust at the Reich supply of aviation motor fuel.

CHALLENGE: The American Automobile Club of New York, through its president, has taken issue with the A.P.I. recommendations as to frequency of crankcase-oil changes. The auto club reminds members that manufacturers haven't retreated from their 1,500-2,000-mile recommendations.

OPTIMISM: In spite of a dozen dry holes in the last fortnight, wildcatters refuse to believe that there is only one Tinsley east of the Mississippi River.

MOTIVES: With production dropping off in Illinois, prices have risen to $1.15. Was it selfish interests who tried to restrict the state's production or a knowledge of the laws of economics?

CHANGE: Last week Illinois was in third place, now it's Oklahoma's turn. Headline writers may like the shifts but they are tough on statisticians.

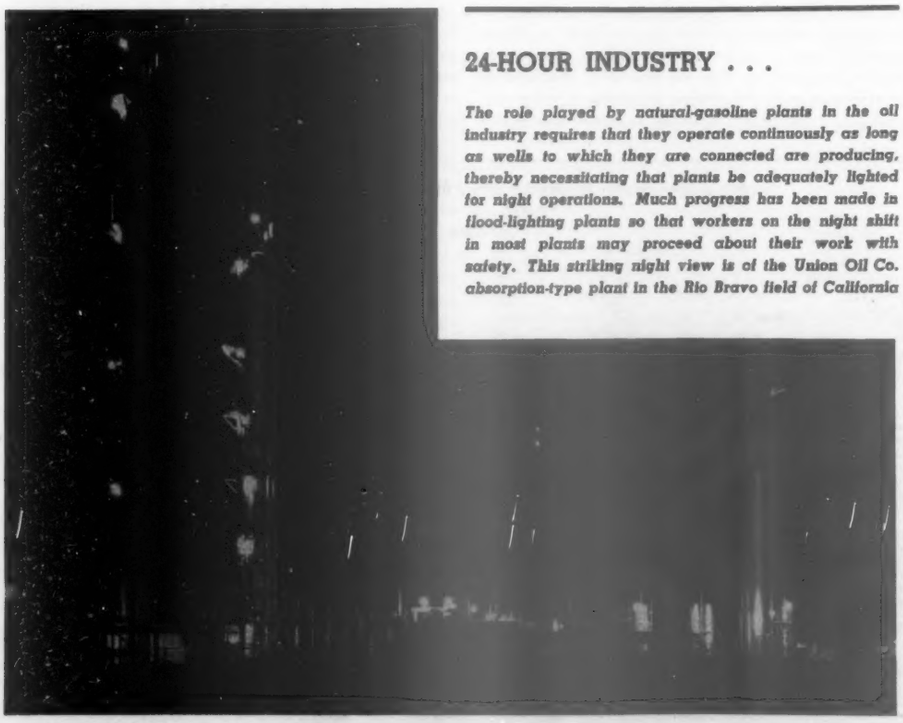
GULF'S BUSIEST: The most active, and one of the largest fields on the Gulf Coast is the distinction claimed by West ranch. Up to 15 drilling rigs are running regularly.

SITTING PRETTY: With three sands producing in the Cumberland pool and 23,000 acres to drill the operators seem to have another Van on their hands. Possibly other operators may be willing to relieve them of the burden.

OUTLET: Operators and lease owners in the Falls City, Neb., area anticipate a fast offset-drilling campaign, now that plans have been announced for a gathering system in the field that will provide a market for 2,500 bbl. of oil daily.

GOOD CHEER: Smiling countenances have displaced dour faces in Kansas oil circles, what with the market demand increasing and some operators predicting a 200,000-bbl. allowable within the next few months.

BARREN OUTCROP: Oil activity in some form is reported in every county in Texas except two, and they are located on the Llano uplift, where the granite outcrops.



24-HOUR INDUSTRY . . .

The role played by natural-gasoline plants in the oil industry requires that they operate continuously as long as wells to which they are connected are producing, thereby necessitating that plants be adequately lighted for night operations. Much progress has been made in flood-lighting plants so that workers on the night shift in most plants may proceed about their work with safety. This striking night view is of the Union Oil Co. absorption-type plant in the Rio Bravo field of California

Mussolini's eastward drive believed calculated to cut Britain off from near eastern oil supplies. Greece may be springboard from which Axis powers may launch vigorous campaign for oil fields.

Refinery in the Kirkuk oil fields of Iraq, one of the chief producing areas in the country

Italy Seen as Driving for British-Controlled Eastern Oil Fields

By J. P. O'DONNELL

NEW YORK, Aug. 20.—Speeding up of Italy's drive in the eastern Mediterranean and increasing tension in the Far East highlighted last week's war developments as they affect oil. Oil was chosen, at least in part, as the excuse for and was regarded by many as the objective of Italy's eastward push, designed, they believe, to sever Great Britain from her near eastern supplies and to gain much-needed supplies for the Axis powers.

Opening a propaganda drive at Greece, Italy charged her with supplying oil to British air and naval forces operating in the eastern Mediterranean. Il Popolo di Roma, a closely controlled government newspaper, said that "200 well-supplied bases of Shell, placed above and below-ground at strategic points on the Greek coast and islands, appear to be used ever more by British air and naval forces operating in the eastern Mediterranean."

The statement was regarded as one of the opening shots in a propaganda campaign by which Italy would bring Greece under the Axis' domination and would enable her to use Grecian bases from which to launch a near eastern campaign with British-controlled oil fields as an ultimate goal. If Italy is successful in her reported demands for use of Saloniki as a base in the Aegean Sea, her navy would be brought 300 miles closer to such a strategic point as Haifa in Palestine. Haifa, already under attack from Italian air forces operating from bases in the Dodecanese Islands, is the major outlet for oil produced in Iraq.

In addition to her drive against Greece which has yet to emerge from the propaganda stage, Italy is also attacking points in Africa which would give her command of the Red Sea and with it control of the Suez Canal traffic and is reportedly planning an invasion of Egypt along the Mediterranean Coast. Despite the reported imminence of this invasion, officials of two American oil companies operating there indicated that the companies had given no thought to abandonment or curtailment of operations and that so far as they knew from what meager information is obtainable, the operations are being carried on as usual. Most exploratory work in Egypt is being conducted in the northeastern part of the country where the two fields, Ras Ghareb and Hurghada, with a combined daily average production of about 14,500 bbl., are located. Little significance is attached to Italy's campaign against the British Somaliland. While control of the Suez traffic is involved, that route, which carries about 30 per cent of Britain's petroleum supplies in normal times, has already been rendered useless for duration of the war.

Italy Suffering Oil Shortage

Italy's shortage of petroleum resources is being counted on by the British as a major aid in the defense of Egypt and other African possessions. When Italy entered the war less than 3 months ago her reserves were estimated at no more than 6 months' supply. Her only assured source of crude oil is Albania where production averages an inadequate 2,500-bbl. per day. Italy is also more vulnerable on another score than her Axis partner, having less synthetic motor-fuel manufacturing capacity. In Africa, Italy faces the problem of supplying her mechanized forces with petroleum, an admittedly difficult task because of the distance and terrain that have to be covered.

Italy's campaign in the Near East is looked upon as the execution of a Nazi plan of long standing. This plan, it was reported some time ago, would involve a drive through the Balkans to the Dardanelles from which point a campaign against the oil fields and refining centers of the Near East could be launched. Unrest in Syria coupled with increasing reports of Nazi fifth-column activity in Iran lend credence to the belief that another long-range plan of aggression is under way.

Italy's charge that Greece has been supplying the British with oil had a parallel in Spain's charge, also issued last week, that Great Britain's shutting off of her oil and gasoline supplies from the United States and Rumania constituted an act of war. The Falange Espanola also intimated strongly that Great Britain was responsible for fires which destroyed oil storage at Alicante. Whether or not this is a prelude to Spain's entrance into the war on the side of the Axis powers is problematical but Great Britain took steps to prevent such an eventuality by announcing modifications of her restrictions on Spanish imports. Since Spain's most voluble complaints have dealt with gasoline, it was regarded as quite probable that restrictions on petroleum products would be eased.

At the same time, the Netherland East Indies were viewing with increasing concern Japan's professed plan for establishing a new order in the Far East since rumors were current that it would be timed with a Nazi assault on Great Britain. This concern was heightened when the Nazis began mass air raids on England last week.

In the midst of defense preparations in the islands, however, there was a possibility that peaceful negotiations for trade between Japan and the East Indies would remove the alternative possibility of war. The Japanese Government announced that negotiations for a trade treaty with the East Indies that would at least partially eliminate the former's dependence on the United States were being carried on with the Netherlands' ministry in Tokyo. In the announcement, Japan said that President Roosevelt's termination of the Japanese-American trade treaty forced Japan to look elsewhere for petroleum supplies and the Netherland East Indies are regarded as the most desirable alternative because of their proximity.

One bar to the peaceful settlement of the issue between Japan and the Indies was the latter's proposal to increase taxes on exports. Two weeks ago Japan issued a stern warning to the Netherland East Indian Government that it would oppose the then-proposed tax increase of 3 to 8 per cent on exports, chief of which is oil. Last week the Indies' Government announced the imposition of a war duty of 5 per cent on exports, including both petroleum and its derivatives, in direct defiance of Japan's expressed wishes.

Slaughter, Duggan, Dean Fields Join for West Texas' Largest

By R. MARNE SANFORD

FORT WORTH, Tex.—The largest field in West Texas, larger even than the present limits of the enormous Wasson field, is now known to exist in the North Permian basin. This great field, which embraces an approximate 58,000 acres as compared with about 50,000 for the Wasson field, was formed by the recent linking of the Slaughter, Duggan, and Dean fields in Hockley and Cochran counties. Approximating on a larger scale, the combined field embraces an estimated 91 sq. miles.

Dry holes have been drilled on the southeast and southwest corners of the Slaughter area and at the extreme north end of the Dean area. However, none are believed to definitely confine production. No large structure or even any particularly relative small, local structural conditions are definitely known to be in association with the field's production. Oil is found in commercial quantities wherever the lime contains sufficient porosity and permeability, the saturation seeming to be prevalent throughout the entire area.

Early Development

Opening the first production in West Texas north of the Bennett field in Yoakum County was the discovery well of the Duggan field. It was drilled in 1936 by Cascade Petroleum Corp. and Devonian Oil Co. as their No. 1 T. B. Duggan, Labor 13, League 55, Oldham County School Lands Survey. Several close-in wells were drilled during the following 3 years, but even by the start of 1939 the field embraced little more than 1,000 proven acres.

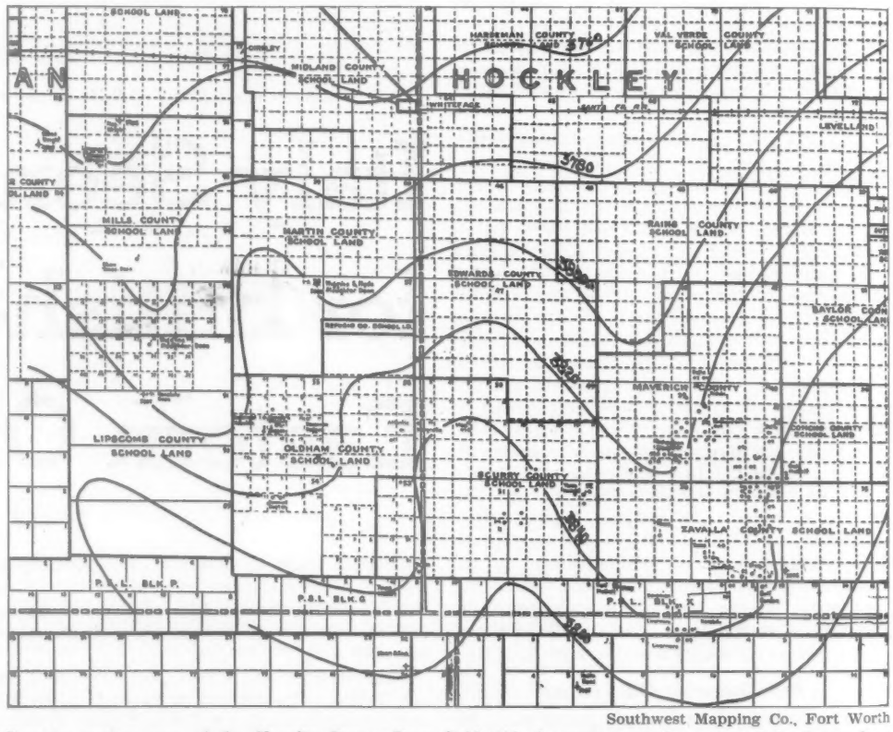
The year following the discovery of the Duggan area, 1937, discovery well of the Slaughter field was completed about 12 miles to the east and slightly south in Hockley County. It was Texas Co.'s No. 1 Bob Slaughter, Labor 83, League 38, Zavalla County School Lands, and made 502 bbl. daily, flowing, from pay drilled from 4,986 to 5,023 ft. The top of the pay in this discovery well was only 32 ft. lower than in the Duggan field discovery well. However, at that time little thought was given the possibility of the fields uniting.

During the months following completion of the discovery several north and southeast extensions were completed. However, this drilling was of the nature of one well at a time. No pipe-line outlet was available for the field, nor for the Duggan field, and for this reason by the middle of April 1939, 2 years after the Slaughter field's discovery, there were approximately 16,000 acres proven and only 16 producing wells in the field.

Wildcatting throughout the general area during 1938 and 1939 resulted in the completion of what were at that time believed three more discovery wells. These were Livermore's No. 1 Wright; Shaw's No. 1 Dean, and Wiggins' No. 1 Dean, all located in a line northwest of the Duggan field.

The greatest strides in developing the entire area have been made during the past 10 months. Early in 1940 and after several drilling programs had been started in both the Slaughter and Duggan fields, George Livermore obtained several hundred acres on a farmout deal and staked two locations in the extreme northern part of Terry County. These wells both made producers and at present a drilling campaign is under way for the developing of semiproven leases in the northern part of Terry County.

About 2 months ago Magnolia Petroleum Co. and Texas Co. undertook to determine whether the acreage both held between the two fields was productive or not. Several locations were staked and drilled, all of which ran about level with other wells in both fields and all of which made good producers. As a result of this drilling and the additional geological information obtained, it is now definitely known that the entire southwestern part of Hockley and the southeastern part of Cochran County comprise one large oil field.



Southwest Mapping Co., Fort Worth

Structure contour map of the Slaughter-Duggan-Dean field with the contours made on top of the brown lime. This map illustrates the two prominent nosings upon which the field is being developed and also the large area which is now proven for production. The field extends about 18 miles in an east-west direction

Geology of the District

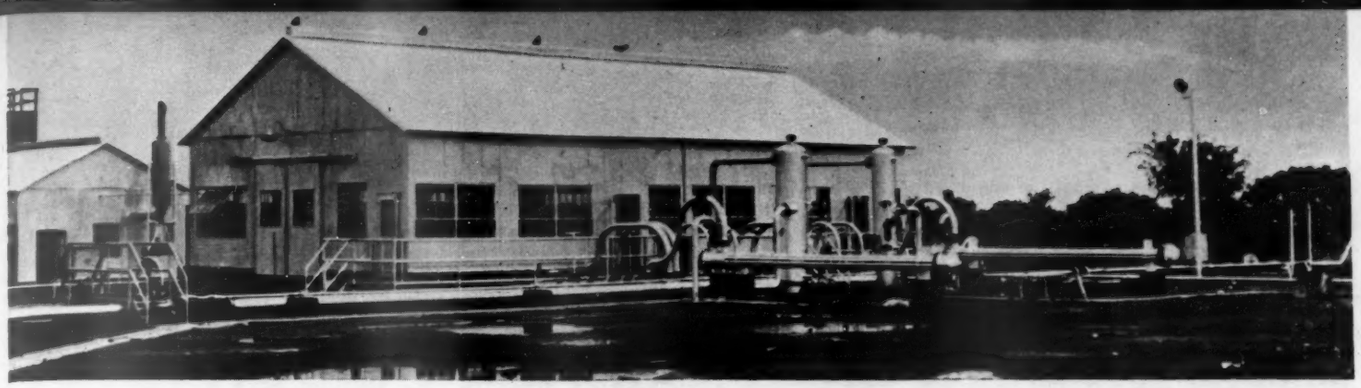
There is no structural closure nor even any anticlinal condition at all present in the area. All production is determined by two clearly outline nosings plunging to the south and broadening to the north. Before the final link wells were drilled a saddle or low valley was thought to exist between the two fields. However, from the accompanying cross-section, based on seven wells extending from the east side of the Slaughter area to the north end of the Dean field, it can be seen that the top of the lime, as well as other markers, run about level.

The slight uplift noticed on the left side of the cross-section is due to the fact that the general dip of strata in the region is to the north where they rise out of the Permian basin and over the Panhandle uplift. The cross-section, from left to right, including the first three wells which comprise the Dean area, is almost parallel with the dip of the strata. From the fourth well on the cross-section, Honolulu-Cascade's No. 1 Duggan, the discovery well in the Duggan field, the line runs about perpendicular with the dip of the strata and shows very clearly the continuous regularity of the strata.

The largest of the nosings in the area is one on which the Slaughter field is being developed. It is believed that production will extend several miles southward into Terry County due to the fact that no leveling at the point of the nose is yet indicated by the drilling in Terry County. Geologists are of the opinion that production throughout the entire district is more or less determined by the porosity and permeability of the lime as found on the flanks of the noses. The best porosity, and hence the best production, is found not on top of the noses nor at the base, but at a level about midway down on each flank.

Estimates range from 2,000 to 10,000 bbl. per acre recovery. However, the median at present seems to be about 7,500 bbl. per acre. Provided all wells can be kept flowing until the end of

(Continued on Page 41)



General view of pressure-maintenance plant operated by Magnolia Petroleum Co. in West Ranch (Vanderbilt) field, Jackson County, Texas

West Ranch Continues Most Active Gulf Coast Field

By NEIL WILLIAMS

WEST RANCH, Jackson County, Texas, continues to hold the lead as the most active field on the Gulf Coast. With from a dozen to 15 drilling rigs running regularly, development of the field is being maintained, and the list of producing wells rapidly swelling. Already one of the largest fields in area on the Gulf Coast, its productive limits for all the various known sands have not been entirely defined, and as yet the known productive area lacks much of being drilled up.

The productive area of between 7,500 and 8,000 acres that already has been proved lies mostly on the 12,000-acre West ranch under lease to Magnolia Petroleum Co., whose drilling is being restricted mainly to border locations for the present, but embraces areas of smaller tracts and diversified lease ownership on several sides where offset requirements and further spread of production are forestalling any early general cessation of drilling activity. As of August 3, there were 158 producing oil wells in the field with five different sands, ranging in depths from 5,100 ft. to below 5,700 ft., represented. These sands, with the number of wells in each by operating companies are shown in the accompanying tabulation.

Completed well hook-up in West Ranch field

	5,100 ft. (Greta)	5,400 ft.	5,500 ft. (Glasscock)	5,600 ft. (Toney)	5,700 ft.	Total
American-Liberty-Geo. Greer	0	0	4	0	3	7
W. Stewart Boyle	0	*1	0	0	0	1
Louis Crouch	0	0	0	0	2	2
Lonnie Glasscock	0	0	9	0	5	14
Humble Oil & Refining Co.	0	0	17	1	0	18
Magnolia Petroleum Co.	41	0	32	0	18	91
Phillips Petroleum Co.	0	0	1	0	2	3
Renwar Oil Co.	0	0	0	0	3	3
Shell Oil Co.	0	0	0	0	3	3
Stanolind Oil & Gas Co.	0	0	6	0	2	8
Superior Oil Co.	0	0	3	1	1	5
WRR Oil Co.	0	0	1	0	2	3
Total	41	1	73	2	41	158

*Completed depth 5,772-82 ft., but believed sand encountered over top of structure around 5,400 ft.

In addition to the oil producers listed in the tabulation, Magnolia Petroleum Co. has a gas well, producing from a sand around 5,000 ft., completed for fuel and other purposes.

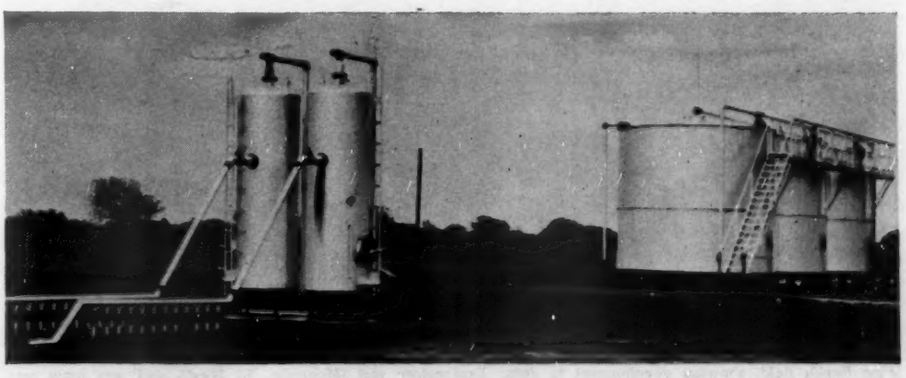
The structure is of a large domal type with the various sands blanketing the top and extending down the sides. In the 5,100-ft., or Greta sand, in which the discovery well was completed and in which all the earlier development of the field took place, production overlies the top of the structure, and it is believed the entire productive area of this sand lies within the West ranch. Productive zones of the other sands circle the flanks of the structure around the producing area of the 5,100-ft. sand. It has worked out so far that the production in each successively lower sand is picked up at successive positions further down structure. Generally speaking, there has been little overlapping of productive areas of the respective sands, the productive zone of each sand in order starting in approximately where that of the next shallower sand starts to play out into the water.

It is considered likely that all the present oil-producing sands, except for the 5,100-ft. Greta sand, carry gas over the top of the structure. However, within the 5,100-ft. producing area no wells have been drilled below that horizon so little can be definitely foretold as to what will be found there.

Magnolia Petroleum Co. now is drilling an exploratory well for the field in its No. 98 West ranch, located near the west side of the 5,100-ft. productive area. This well, in which all sands are being cored and drill-stem tested, is expected to reveal considerable information as to the sand conditions on the crest of the structure. Among other things this well has found an oil sand still deeper than those now producing. In this sand, which was cored from 6,158-77 ft., a 10-minute drill-stem test was made from 6,169-77 ft., recovering 300 ft. of oil and 270 ft. of oil-cut mud.

Above the 5,100-ft. sand over the top of the structure are various shallower sands, all of which have carried gas. In several of these, in low places, oil showings were encountered, and it is possible that small wells could have been completed, but these were passed up in development of the 5,100-ft. sand. It is considered probable also that there are other deeper sands than those already productive that at some place on the structure will produce oil.

Field-development rules call for a spacing of one well to 20 acres. However, spacing followed by Magnolia Petroleum Co. in drilling the West ranch and adopted on other leases by other companies



Separator and field stock-tank battery installation, West Ranch field

where possible has been on a basis of one well to 40 acres, or 1,320-ft. spacing. Twenty-acre spacing can be effected easily later, if desired, by "five spotting" the wells, drilling a well in the center of each group of four wells.

Magnolia Petroleum Co. recently has placed in operation a pressure-maintenance plant for the 5,100-ft. (Greta) sand. In this project gas produced from both the 5,100-ft. sand and wells of this company in the 5,700-ft. sand is returned to the 5,100-ft. sand to maintain the bottom-hole pressure of this horizon.

The project provides for metering the gas production from the two respective sands, and injecting into the upper sand, productive area of which is believed to lie entirely on the West ranch, a volume sufficient to maintain the reservoir pressure. The volume required will be accurately determined by engineers on the basis of reservoir-pressure behavior.

Fuel Requirements

From the gas system, gas will be taken to supply fuel requirements, and any deficiency in required volume for injection in the sand will be made up by production from the company's well in the 5,000-ft. gas sand.

Location of the plant is near the center of the 5,100-ft.-sand producing area. A single input well (No. 77) located near the plant at the approximate apex of the structure, has been provided. This well originally was completed as an oil producer (in the 5,100-ft. sand) and then with completion of the repressuring plant converted to use as the input well.

The pressure-maintenance plant includes three 230-hp. (at 200 r.p.m.) Cooper-Bessemer 17 by 20-in. (bore and stroke) engines, each equipped with 12¾ by 6¼-in. compressors. One of these takes suction from the field-gathering system, discharging to suction of the other two compressors, one serving as a low-pressure unit supplying field fuel gas and the other as the high-pressure unit for injection of gas into the sand.

Bottom-hole pressure of 5,100-ft. sand is approximately 2,400 lb., having shown a relatively small drop from the original pressure, due to the highly restricted rates of withdrawal.

Daily allowable production of the field is approximately 6,340 bbl., which is materially reduced by shutdown days. The allowable is allocated to the wells on a basis of 50 per cent on acreage and 50 per cent on potential. This brings the average well to approximately 40 bbl. daily, exclusive of shutdown time.

Main development of the field has taken place within the past year, and a large part within the last 6 or 7 months. Although opened in August 1938, early development, until June 1939, was confined to the West ranch property of Magnolia Petroleum Co., which company restricted drilling to a single line of wells, all in the 5,100-ft. sand, extending due west from the discovery well (No. 3 West Ranch), and spaced 1,320 ft. apart.

In June 1939 Lonnie Glasscock completed the first well outside of the Magnolia block in his No. 1 Drummond, located about 2½ miles north of Magnolia's line of wells. This well failed to produce in the 5,100-ft. sand, and was drilled deeper, finding the 5,500-ft. sand, in which it was brought in at 5,524-43 ft. This well, located in the southeast corner of the Drummond lease, bordered on the south by Magnolia's West ranch and on the east by Humble Oil & Refining Co.'s Toney lease, occasioned offsets by both the latter companies, and in the steady extension of this offsetting additional companies were brought into the play.

About the same time as the Glasscock 5,500-ft. sand discovery well was completed, Magnolia Petroleum Co., in its No. 12 West ranch, on the extreme west end of its original line of wells and also at the west edge of the ranch, found salt water in the 5,100-ft. sand, defining that sand on that side, and drilled deeper, also finding the Glasscock 5,500-ft. sand, in which this well also was completed. Since, production of this sand, as well as that of the 5,700-ft. sand later opened, has been extended to areas of diversified lease ownership bordering the west side of West ranch.

Production in the 5,700-ft. and also the 5,600-ft. Toney sand, in which so far only two wells have been completed, was opened late last December and the first part of this year with the extension of development in the 5,500-ft. Glasscock sand. As indicated in the accompanying tabulation, the major development of the field has been in the 5,100-ft., the 5,500-ft., and the 5,700-ft. sands, with the greatest number of wells in the 5,500-ft. sand.

Within the last several weeks, production on the west side has been extended about a mile farther southwest by a well drilled by W. Stewart Boyle. This well (No. 1 Bennview Development) not only extended the field but opened another sand for production. The sand, in which the well was perforated at 5,460-70 ft., has been designated as the Boyle sand. Although its position has not been definitely determined, it is believed by some geologists to be one of the shallower sands that have shown gas over the top of the structure.

Almost coincidental, however, with this extension, Magnolia Petroleum Co. got a dry hole in its No. 1 Jannie Bennett, located as an outpost at the north end of the west-side production. Drilled to a total depth of 6,410 ft., this test got salt water in all the present productive sands of the field. Incidentally, this well marked the first failure Magnolia has had since the field was opened, after drilling more than 90 producing wells. Prior to the starting of the discovery well, this company drilled two deep tests, which proved dry, but these were located some distance southeast of present production.

Three Other Dry Holes

For the field as a whole there has been only three other dry holes, not including outlying tests drilled prior to discovery of production. These three were at the extreme north end of the field, and except at this point, on the southeast, the extreme south and at the point of Magnolia's Bennett failure, the field has not been defined.

Because of a strong artesian water flow around 1,200 ft., approximately 1,300 ft. of surface casing, usually 13⅜-in., is run. Normally, 5½-in. flow string is cemented, although 7-in. pipe is run in some cases. Practice is to drill through the sand to a seat below the productive zone and then perforate at the desired point. However, until the past year the practice was followed of setting the casing on the sand and setting screen in early conventional Gulf Coast style. Screen usually is not set when wells are perforated.

In completion of wells, particularly where wells are high on structure, some trouble is experienced with gas channeling, but operators now are coming to the conclusion this may be mechanical trouble due possibly to inadequate cement jobs. With special precautions to insure thorough cementing, the problem is being diminished.

All sands so far productive are in the Frio section. Gravity of the oil ranges from 25 gravity in the 5,100-ft. production to 30 gravity in the deeper sands. All production to date is flowing. Highly restricted rates of flow and conservative development practices have been followed to the extent that reservoir energy has been maintained, making artificial lift unnecessary. Pipe-line outlet is provided by Magnolia Pipe Line Co.

Zingery Map Co., Houston

West Ranch field, showing development to date. Exploratory test (Magnolia, 98 West), and gas input well (Magnolia, 77 West) for pressure-maintenance project are indicated

Oil Imports for Domestic Use Below Treaty Quotas

By H. STANLEY NORMAN

AN increase of more than 35 per cent in the imports of crude oil and refined petroleum products through the first 7 months of this year again justifies an examination of the record. Petroleum imports for domestic consumption in the first 6 months alone increased approximately 75 per cent, averaging 163,472 bbl. daily, the Bureau of Mines reported at the end of June. Imports of all oils, including receipts in bond and for domestic consumption, reached a peak for the 7 months in June when the average was 233,133 bbl. daily.

Petroleum imports from South America have been entering at a higher rate since the United States-Venezuela trade agreement was ratified by Congress and became effective December 16 last. The trade treaty allows imports into the U. S. in 1940, at 10.5 cents per barrel of crude, reduced crude, gas oil, and residual fuel oil, totaling 169,550 bbl. daily, or 61,892,000 bbl. for the year.

The import quota is the result of the State Department's formula allowing these 10.5 cents per barrel receipts to equal 5 per cent of the total quantity of crude processed in refineries in continental U. S. during 1939. Individual quotas assigned to countries from which U. S. petroleum imports are drawn were based on the actual receipts for the first 10 months of 1939. Under this formula the total quota of reduced tariff petroleum imports for 1940 was divided as follows:

	Per cent of total
Venezuela	71.9
Netherlands	20.3
Colombia	4.0
Others*	3.8
Total	100.

*Used almost exclusively by Mexico.

Any imports in excess of the total of 169,550 bbl. per day would take the

(Continued on Page 41)

TABLE 1—DAILY AVERAGE U. S. IMPORTS OF CRUDE AND PRODUCTS (CONTINENTAL UNITED STATES)

(Bureau of Foreign and Domestic Commerce)
6 Months of 1940
(Barrels of 42 gallons daily)

Country of origin—	Duty paid	Bonded	Refining in bond	Total
Venezuela:				
Crude	71,217		6,043	77,260
Residual fuel oil	15,747	2,886		18,633
All other products	1,089	330	2,860	4,279
Total	88,053	3,216	8,903	100,172
Netherlands:				
Crude	.....	.....	.....	.....
Residual fuel oil	27,234	30,424	.....	57,658
All other products	18,504	538	4,476	23,518
Total	45,738	30,962	4,476	81,176
Colombia:				
Crude	1,001	.....	.....	1,001
Residual fuel oil	.....	.....	.....	.....
All other products	.....	.....	.....	.....
Total	1,001	.....	.....	1,001
Mexico:				
Crude	22,560	.....	232	22,328
Residual fuel oil	2,345	.....	.....	2,345
All other products	5,213	1	.....	5,214
Total	30,118	1	232	29,887
Other countries:				
Crude	.....	.....	.....	.....
Residual fuel oil	322	398	.....	720
All other products	293	38	.....	331
Total	615	436	.....	1,051
Total all countries:				
Crude	94,778	.....	5,811	100,589
Residual fuel oil	45,648	33,708	.....	79,356
All other products	25,099	907	7,336	33,342
Total	165,525	34,615	13,147	213,287
Total excluding Mexico:				
Crude	72,218	.....	6,043	78,261
Residual fuel oil	43,303	33,708	.....	77,011
All other products	19,886	906	7,336	28,128
Total	135,407	34,614	13,379	183,400

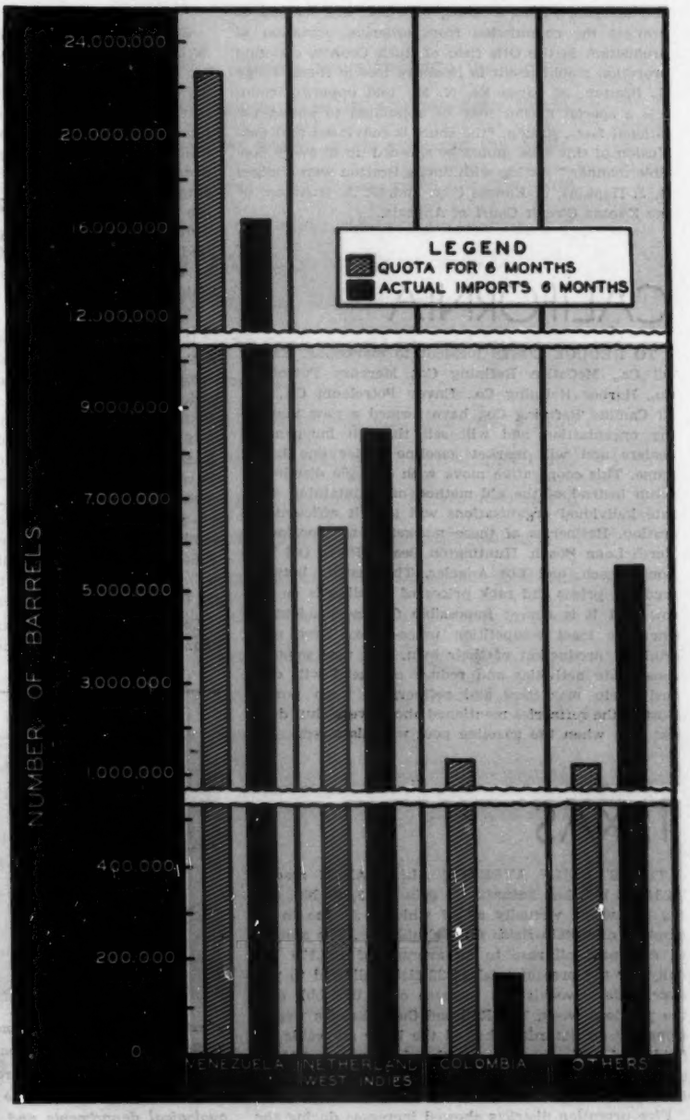
Classification—Duty paid: "Entered for immediate consumption" and "withdrawals from bond for consumption." Bonded: "Entered bonded warehouse" less "withdrawals from bond for consumption." Refining in bond: "Entered bonded manufacturing warehouse for manufacturing and export."

TABLE 2—DISTRIBUTION OF IMPORTED PETROLEUM*

(In thousands of barrels)

Month—	Baltimore	Boston	New York	Philadelphia	Other Atlantic	Gulf Coast
January	378	370	2,071	886	309	670
February	534	533	2,910	1,518	656	548
March	631	632	3,072	1,404	705	824
April	384	307	2,416	1,034	502	811
May	799	413	3,204	1,398	548	782
June	491	517	3,132	1,843	431	580
July	542	428	2,695	1,650	592	1,127
Total 7 months, 1940	3,759	3,200	19,500	9,833	3,743	5,342
Total 7 months, 1939	2,732	1,847	19,032	6,088	1,823	2,916

*These figures do not distinguish between imports for domestic consumption and those in bond.



Relationship of import quotas and actual receipts

STATE CAPITALS...

KANSAS

HEARINGS TO DETERMINE the market demand for crude oil and natural gas in Kansas has been set for August 29 by the Corporation Commission. Officials said the commission would determine the demand for oil for the month of September only, instead of for a 3-month period, a practice adopted about a year ago.

This action will be because of "unsettled conditions in the industry it is advisable to keep in closer touch with purchasers and producers." The demand for gas, however, will be taken for the months of September, October, and November.

PLEA BY TWO OIL COMPANIES for a temporary injunction against the Kansas Corporation Commission has been taken under advisement by a three-judge federal court. Bay Petroleum Corp., of Denver, Colo., and Morgan, Flynn & Cobb, of Tulsa, are seeking to prevent the commission from ordering proration of production in the Otis field of Rush County, claiming proration would result in financial loss to them. Judge G. Bratton, of Santa Fe, N. M., told opposing counsels a special master may be appointed to obtain additional facts, stating, "the court is convinced that conclusion of this case should be speeded up in every possible manner." Sitting with Judge Bratton were Judges R. J. Hopkins, of Kansas City, and W. A. Huxman, of the Kansas Circuit Court of Appeals.

CALIFORNIA

TO REDUCE COSTS incident to marketing, Exeter Oil Co., McCallen Refining Co., Mercury Petroleum Co., Harbor Refining Co., Envoy Petroleum Co., and El Camino Refining Co., have formed a new marketing organization and will sell through independent dealers and will market gasoline under one brand name. This cooperative move with a single distributor setup instead of the old method of maintaining separate individual organizations will permit efficient operation. Refineries of these marketers are located at North Long Beach, Huntington Beach, Playa Del Rey, Long Beach, and Los Angeles. The margin between crude-oil prices and rack prices of gasoline is so narrow that it is almost impossible for independent refiners to meet competition unless they have some crude-oil production of their own. The new move to consolidate activities and reduce overhead will obviously help marketers and refiners to keep pumps. Most of the refineries mentioned above were shut down last May when the gasoline pool was dissolved.

TEXAS

TEXAS' DAILY AVERAGE ALLOWABLE rose to 1,234,323 bbl. last Saturday, a gain of 33,959 bbl. during the week, virtually all of which was due to exemption of certain fields from shutdowns. The amount of exempted oil rose to an average of 105,179 bbl. daily for the present total of 32 fields allowed to produce 7 days weekly, an increase of 31,076 bbl. over the previous week. The Railroad Commission's weekly summary on Saturday showed the basic allowable for fields and wells exempt from the closings rose 106,969 to 362,346 bbl. The basic allowable of the state rose 4,068 to 1,591,066 bbl.

Five proration districts showed increases during the week, while one declined and two were unchanged. Greatest gain was in West Texas, which rose 19,338 bbl. daily average to 195,350 bbl. as average daily amount of exemptions gained 18,568 to 30,036 bbl. Average daily allowables as of Saturday for other districts and the change from the preceding week were, in barrels:

Southwest Texas, 202,028, up 12,309; East Central, 72,860, down 192; West Central Texas, 46,398, up 1,476; North Texas, 101,578, up 820; Panhandle, 62,357, up 208; East Texas, 372,788, and the Gulf Coast, 180,964, both unchanged.

GOV. W. LEE O'DANIEL has announced that during his next term he would seek the establishment of a separate commission to handle the oil industry of the state. Many oil men believe that such effort should be made to relieve the overburdened Railroad Commission, but feel the posts shall not be appointive but elective.

EFFORT TO INCREASE ALLOWABLES from 23 to 30 bbl. per well in the Fairbanks field of Harris County, Gulf Coast Texas, failed Monday in a suit heard before federal Judge T. M. Kennerly in Houston. The suit asking for the increase was filed by H. E. Williams, Houston independent oil operator, against the Railroad Commission. Judge Kennerly said under evidence given in the case, the Railroad Commission had ample room to reach the conclusion it reached and fix the allowables it fixed.

"I do not, in the light of evidence believe, nor do I find such orders, nor the amount of such allowable, to be either arbitrary, unreasonable, or unnecessary as claimed by the plaintiff," Judge Kennerly said.

RAILROAD COMMISSION ENGINEERS began Monday preparing data on basic schedules for use by the commission in adopting next week an oil-proration order to become effective September 1. Dr. F. V. L. Patten, director of production, advised Chairman Lon A. Smith that the data would be ready for presentation to the commission next Monday. It will be patterned in conformity with evidence adduced at a recent statewide hearing. Mr. Smith stated it had not been decided whether the commission would issue an order for September only or adopt one for a 3-month period of September through November. Issuance of the order will be delayed until after the session of the Interstate Oil Compact Commission next Friday in Oklahoma City.

Commissioner Smith expects only relatively few changes will be made in the order. A series of adjustments recently were made to provide increases in areas where purchasers showed a strong market demand. He predicted that the present method of pinching the allowable by shutdowns would be continued.

West Virginia University, noted for the excellence of its School of Mines, will soon break ground for the construction of a modern Mineral Industries Building. The building will also house the chemical engineering and geological departments and state Geological Survey

ARKANSAS

FOLLOWING ITS REGULAR statewide hearing, in Magnolia, the Arkansas Oil and Gas Commission released its allowable order for September. Allowable production in the flush fields of the state remains relatively the same as in August, with the daily allowable set at 47,140 bbl. Total settled field production is estimated at 27,965 bbl. The commission fixed the allowables for 30 days only, announcing it would meet at El Dorado September 16 to consider October production. Officials said further time was desired to make bottom-hole pressure tests in all prorated fields in order to determine suitable allowables.

OKLAHOMA

AT THE STATE'S PRORATION HEARING in Oklahoma City on August 30, Oklahoma operators are expected to decide whether a 30-day order covering only September will be issued, or one of 60 or 90 days. In view of action taken by Texas and Kansas proration bodies, many observers are of the opinion that only a 30-day order will be issued. However, since the Interstate Oil Compact Commission meets one week earlier and may recommend or take action that would cause Texas and Kansas to lengthen their orders to 90-day periods, others consider it likely that a 90-day order covering September, October, and November may be recommended by operators. In view of the fact that Illinois' production is tending to diminish and thereby strengthen demand for Oklahoma and Kansas crude, they feel sufficient basis exists for issuance of an order covering a period longer than one month.

LOUISIANA

DISAGREEMENT BETWEEN OIL OPERATORS and the Louisiana Department of Conservation continues regarding enforcement of Act 77, recently passed by the legislature. The provisions of the act require that information gained from geophysical surveys of state-owned lands be given the state. At a conference in New Orleans last week, attorneys and land and geophysical representatives of the oil industry called for repeal of the law. They held that the oil companies would never consent to turn over to the state the data obtained through great expense to them, and that the strict enforcement of the act would greatly curtail geophysical exploration in coastal Louisiana, where the state owns much acreage. It was contended further that if reports were made to the state for all surveys which touched state lands, the state would obtain a large share of all such data in coastal Louisiana, since state lands are widely dispersed.

Gov. Sam H. Jones, appearing at the meeting stated that Louisiana was only asking protection in determining in a measure what state lands were worth as oil prospects. It was pointed out that the new administration in Louisiana is saving operators millions of dollars in development costs and that it was not the officials' object to discourage the industry, but rather to promote and cooperate with it.

The meeting, called to devise a working agreement under which the information would be furnished the state, failed to bring state and oil-company representatives to agreement.

EUGENE STANLEY, Louisiana attorney general, last week announced his department had begun investigation of all oil and gas leases of state-owned lands with a view to recovery suits if any irregularities were found. It is estimated the investigation would involve lands valued at $100,000,000 leased in the last 12 years, 1,500,000 acres of land being under lease.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Money Product?

The industry's familiar reference to gasoline as its "money product" is getting decidedly threadbare.

Unless something is done quickly in the way of repairs, this expression will have to be dropped by everyone except the tax collectors.

Right now with more gasoline being consumed than ever before, net gasoline prices in most markets are not only at the lowest point of the year but are within one-half cent of the low of the last quarter century.

Take the representative situation in the 10 largest cities which, including their metropolitan areas, account for 25 per cent of the motor fuel consumed in this country.

The normal average retail price at this time in this list of 10 cities which starts with New York City and ends with Pittsburgh, is 16.9 cents.

Right here, the sellers in these cities will insist that the use of the word "normal" in reference to wholesale and retail-gasoline quotations is just as painfully trite and inaccurate as is the assumption that money is being made in the manufacture and sale of the product. Concessions of ½ to 2 cents from the normal are found in several of the cities.

But the normal makes bad enough reading and we are sticking to the 16.9-cent average.

From this we immediately take 5 cents which happens to be the average federal, state, and city taxes in these cities—the national average is 6 cents.

This leaves a net filling-station price of 11.9 cents which is where the industry's price starts although politicians always ignore the taxes and much prefer to use the top figure.

Next comes the 5½-cent margin of the wholesaler and the station operator and an average allowance of 1½ cents to cover the transportation costs between fields, refineries, and bulk stations.

Subtracting this 7-cent spread, allowed for marketing and transportation costs, from the net retail price we arrive at 4.9 cents for gasoline at the refineries.

This price is above the average spot quotations for regular-grade gasolines and of course does not take into consideration the large third-grade movement at still lower levels.

Nor does this refinery price indicate the significance of natural-gasoline sales in southwestern fields, 25 to 40 per cent under posted crude prices at the wells.

No one will contend that these prices are adequate in relation to the cost of finding, drilling, producing, and refining more than 3½ million barrels of crude oil daily plus the profits of a 14-billion-dollar industry.

There need be no confusion as to what has to be done to correct this condition.

The Labor Day holiday will end this year's principal gasoline-consuming period with more than 10 million barrels of excess gasoline on hand. A month-to-month decline in consumption will continue through January.

With a motor-fuel demand of more than 200 million barrels for the last 4 months of the year, refiners can correct this excess-inventory situation with a 5 per cent downward adjustment from their projected fall and early winter plant operations.

The same objective in many cases can be attained with changes in yields of products with no reductions in crude runs to stills.

Trends in gasoline stocks are important because they are a barometer which quickly indicates any lack of balance in operations.

The liquidation of present excesses and an operating program which will prevent a duplication of last year's burdensome accumulations this fall and winter is the most pressing problem of the industry at this time.

July Completions Drop Due to Decline in Illinois Activity

By W. V. HOWARD

DURING the month of July, 2,626 wells were completed, of which 690 were dry, 202 were gas wells and 1,734 were oil producers with an average initial production of 293 bbl. This represents a decline of 129 producers as compared with June and a drop in average initial production of 43 bbl. Considering the first 6 months of the year, completions averaged 2,509, dry holes 522, gas wells 158, and oil producers 1,829. Compared with this average, there has been a decline of 95 oil producers and an increase of 168 dry holes and 42 gas wells, making a net increase in all completions of 115 wells. Initial production for the first 6 months of the year was 363 bbl. as compared with July's figure of 293 bbl.

A detailed summary of activity in all fields will be found on Pages 107 to 109 of this issue of The Oil and Gas Journal.

In seeking a possible cause for this decline, Illinois is the logical starting point. Average oil completions in that state for the first 6 months were 253, as opposed to 339 in June and 247 in July. Initial production for the 6-month period averaged 727 bbl. per well, for June 789 bbl. per well, and for July 560 bbl. per well. This decline was caused by the near completion of the Devonian drilling campaign at Centralia and Salem. The decline in average initial production in Illinois during the past month is almost exactly sufficient to account for the average decline for the country as a whole.

Areas which show an increase in activity over June include Texas Panhandle, up 70 per cent; North Central Texas, up 28 per cent; and coastal Louisiana, up 23 per cent. In the two areas last named the increased activity is due to discoveries and the drilling of offsets. Throughout the country as a whole there are no new large flush fields to be drilled and the record of the past month indicates that Illinois will settle down to steady production, probably at somewhat lower levels.

Although many dry holes are edge wells limiting production of pools, the number of dry holes drilled furnishes an index of prospecting activity. Thus, in Kansas, where many fields remain to be drilled up and where market conditions are not favorable, wildcatting tends to decline. Dry holes drilled in Kansas numbered 46 in June and 29 in July with a 7-month average of 27. In Oklahoma, where there is much less required drilling at present and a declining state allowable, there were 76 dry holes drilled in July, 57 in June, and an average of 52 per month for the first 7 months of the current year. Other areas which show large increases in dry holes are North Central Texas, June 64, July 108; North Louisiana, June 9, July 16, and Michigan, June 43, July 57. In two of these areas, namely North Central Texas and Michigan, this drilling campaign has resulted in the discovery of new pools which will do much to offset declining production and prospects in North Louisiana appear better than for some time in the past.

The decline in active operations, both rigs and drilling wells, totals 500 wells, but this large decline is not indicative of decreasing activity over the country as a whole. In the eastern fields, which have been affected by lower prices, operations are down 77; there are 135 fewer operations in Illinois, where the wildest part of the drilling campaign is over.

Few areas show average initial production of over 1,000 bbl. per completed oil well. This figure may be considered as an arbitrary lower limit to flush production. Counties having better than this average initial production during the past month include Montague, North Texas, 1,238 bbl.; Crane County, West Texas, 1,710 bbl.; Upton County, West Texas, 1,818 bbl.; Yoakum County, West Texas, 1,050 bbl.; and Clinton County, Illinois, 1,378 bbl. Although falling below 1,000 bbl. average initial production, Ector County, West Texas, has the record of having 47 oil wells completed during the month without a single dry hole.

Compact Commission to Hear Supply-Demand Statistics

At the quarterly session in Oklahoma City August 23, members of the Interstate Oil Compact Commission are expected to devote a majority of their time hearing addresses on the statistical position of the industry and on the role of petroleum in national defense. George R. Hopkins, of the Bureau of Mines; Fred Van Covern, director of statistics for the American Petroleum Institute; and Harold B. Fell, executive vice president of the Independent Petroleum Association of America, will address the body on the statistical situation.

On the second phase of the program Dr. R. E. Wilson, petroleum technologist of the National Defense Advisory Commission, and W. R. Boyd, Jr., executive vice president of the A.P.I., will address the compact on petroleum and national defense. Dr. Alfred H. Bell, Illinois state geologist, is scheduled to review developments and operations in that state. Governor Phillips will preside at the meeting at the Biltmore Hotel.

It will be the first session to be attended by J. C. Hunter, recently appointed Texas' compact representative by Gov. W. Lee O'Daniel to succeed Col. E. O. Thompson. Apprehension by some Texas producers as to the possibility of unharmonious relations between members of the Railroad Commission and Judge Hunter were allayed somewhat last week following pledges of cooperation by two commission members and Mr. Hunter. Commissioners Thompson and Jerry Sadler plan to attend the sessions, but Commissioner Smith will not attend.

Mr. Sadler announced that he intends to bring before the compact the subject of Illinois' unprorated production. That is in line with his recent warning that unless other states, including Illinois, "do something to reduce their production, beginning September 1," he would recommend that Texas increase its production "to the extent we can compete with Illinois or any other state." Commissioner Smith at this time does not wholeheartedly share Mr. Sadler's view nor lend his weight to the threat. He feels actual market demand cannot be disregarded in fixing allowables, and it would be a dangerous course to pursue in opening production to a point above that which the market would readily absorb.

Texas Co. Advances Illinois Crude Price to $1.15 Per Barrel

The posted price of Illinois crude oil was advanced 10 cents at 7 a.m. August 21 to $1.15 per barrel by the Texas Co., purchaser of approximately 110,000 bbl. daily in the basin fields of that state.

Rumors that a price advance was imminent in Illinois had been circulating for several days, gaining momentum as production in the state declined. The Texas Co. purchases almost a third of all production in the state and it is regarded only a matter of hours until other buyers in the state would meet the advance.

Illinois crude prices have been considered below a parity with Mid-Continent crude postings for several months but production increases came with almost uninterrupted regularity until the latter part of June when a peak of 518,000 bbl. was reached. Since July declines have occurred each week through that ended August 17 when Illinois production was estimated at 392,700 bbl. daily, a loss of 3,250 bbl. from the preceding week which was the most moderate recession reported in 7 weeks. Peak production was 518,224 bbl. daily for the week ended June 29.

Considering the difference in costs of transporting crude to the Illinois-Indiana-Kentucky refining district from the Mid-Continent the new price of $1.15 per barrel approximately attains the cost parity of supplies available to refineries in that territory.

Deliveries are still being made against unexpired crude-oil contracts at less than the previous top posted price of $1.05 per barrel but producers were demanding the going market as rapidly as older commitments expired.

Bureau of Mines September Forecast 7 Per Cent Ahead of 1939

WASHINGTON, D. C., Aug. 20.—Crude-oil demand in September was estimated today by the Bureau of Mines to average 3,624,300 bbl. daily, an increase of 7 per cent over the actual for the same month a year ago. The September crude requirements are less than 1 per cent under the calculated demand for August which totaled 3,657,700 bbl.

The decline in estimated demand of 33,400 bbl. daily was fairly well distributed among the producing states. Kansas increased 3,900 bbl. and Arkansas demand advanced 4,200 bbl. daily.

Demand from Texas was estimated down 6,100 bbl.; California is off 5,400; Illinois, 10,600; Oklahoma, 5,600; Louisiana, 1,400; Wyoming, 6,000; Michigan, 1,400; Montana, 2,900 and Mississippi, 2,600 bbl. daily. The demand forecast by states follows:

State—	Sept., 1940	Aug., 1940
Texas	1,320,300	1,326,400
California	593,000	598,400
Illinois	430,000	440,600
Oklahoma	397,000	402,600
Louisiana	274,700	276,100
Kansas	170,600	166,800
New Mexico	105,300	105,200
Wyoming	75,300	81,300
Arkansas	69,700	65,200
Michigan	55,700	57,100
Pennsylvania	47,600	48,000
Montana	17,700	20,600
New York	13,700	14,000
Kentucky	13,300	13,900
Mississippi	9,700	10,300
Indiana	9,300	10,000
West Virginia	9,000	9,000
Ohio	8,300	8,000
Colorado	4,000	4,200
Total	3,624,300	3,657,700

Set Dates for Retrial in Madison Oil Cases

MADISON, Wis., Aug. 20.—Dates have been set by federal District Judge Walter C. Lindley for retrial of the so-called Madison oil cases No. 1 and No. 2.

Retrial of case No. 2 has been set November 18. It involves companies which did not enter nolo contendere pleas to the indictment charging violation of the antitrust act.

Companies involved in the case retrial opening November 18 are the Texas Co., Tide Water Associated Oil Co., Gulf Oil Corp., Globe Oil & Refining Co. of Illinois, Kansas, and Oklahoma, and National Refining Co. Retrial of case No. 1 will open January 20, 1941, and will involve 4 companies and 17 individuals who were granted a new trial by District Judge Patrick T. Stone at Madison after conviction by the jury. The 12 companies and 5 individuals whose conviction was upheld by the U. S. Supreme Court in May will not receive new trial.

Underground Storage of Aviation Gasoline Planned by Defense Commission

WASHINGTON, D. C., Aug. 20.—Establishment of a 100-day underground reserve supply of aviation gasoline in the United States has received approval of the Army and Navy. Secretary of the Navy Knox told of the underground aviation-gasoline storage problem in addressing the Senate subcommittee on appropriations August 20.

The use of "huge subterranean tanks" for storage purposes has been discussed with President Roosevelt and has received his approval. Stocks of aviation gasoline at the end of June totaled 3,904,000 bbl. and the demand in June averaged 13,366 bbl. daily. The 100-day supply would call for 1,336,6C0 bbl. of aviation motor fuel.

Hint at Political Push to Force Divorcement of Pipe Lines

By HENRY D. RALPH

WASHINGTON, D. C., Aug. 19.—Political pressure to force divorcement of major oil companies from their pipe-line and marketing facilities is hinted in an exchange of correspondence between Sen. Guy M. Gillette of Iowa and Asst. Atty. Gen. Thurman Arnold.

Pointing out that he has suspended action on pending bills to force such divorcement in the belief that the Department of Justice would soon bring a suit to accomplish this under the antitrust laws, the senator declared that the public interest requires action soon. In a guarded reply, Mr. Arnold stated that the national-defense angles of the suit are still being studied and that "we anticipate no conflict."

It is a matter of conjecture whether this means that the National Defense Advisory Commission will convince Mr. Arnold that the suit should not be filed or whether Mr. Arnold will convince the commission that it will not interfere with national defense. Observers are divided in their opinions, but most believe that chances are better than 50-50 that the suit will be filed eventually.

If the official decision is to drop the divorcement proceedings for the duration of the emergency, there will be a public statement of the reasons. These reasons probably will not satisfy Senator Gillette and others in Congress who favor disintegration of the oil industry, and the subject, together with the whole matter of antitrust-law enforcement, may be thrown into politics. A congressional investigation is being talked, but more probable is action by House and Senate committees to force out for a vote the various bills for pipe-line and marketing divorcement.

The nature of the final decision of the Department of Justice and the Defense Committee probably will have much to do with the ultimate reaction in Congress. It must be remembered that the commission is actually advisory to the Council of National Defense, composed of members of the president's cabinet, and that President Roosevelt himself is chairman of the commission. If an official statement is made in the name of the entire membership of the council and the Advisory Commission, giving plausible reasons why considerations of defense make it inadvisable to attempt to break up major oil companies at this time, such a statement will carry so much authority that it is not likely that many members of Congress will care to take a contrary stand publicly at this time.

Matter Becoming Political Issue

Since decision as to the oil suit will be a key to the administration's antitrust policy in connection with defense, whatever action is taken will undoubtedly have careful consideration by the highest Government officials, and it is obvious that the matter is rapidly becoming a political issue.

The texts of the letters between Senator Gillette and Mr. Arnold follow; Senator Gillette writing:

"I am somewhat disturbed over the trend of events in connection with the alleged violations of antitrust statutes by some of our oil companies as bearing on the course of legislation which is pending in Congress in which I have a personal interest as one of the sponsors.

"You will recall that, with Senator Borah, I have introduced in the Senate two proposals requiring the divorcement of the business of marketing petroleum products from the production and distribution field for such products, and, also, for the divorcement of pipe-line activities and methods in connection with the producing oil companies. You will recall that some time early in the spring of this year I had a conversation with you with reference to the studies that have been made by your section of the Department of Justice in connection with this field, and you informed me at that time that the department was preparing, under your supervision, to institute a number of suits for violation of existing statutes and requiring a divestiture in some instances. As a result of our conversation, it seemed wise and mutually beneficial from the standpoint of legislative and also judicial activity to parallel action and conduct hearings on the proposed legislation coincidental with the judicial prosecutions. You requested me to delay hearings on the legislative proposals until such time as you were ready to proceed with the suits you were preparing to file. I recognized the wisdom of your request and acceded to it. I have delayed the hearings up to the present time. I learned indirectly that you are about to abandon the prosecutions contemplated.

"Unfortunate Position"

"I am sure you will recognize the unfortunate position in which it places me and the pending legislation. I do not know what reasons impelled your decision to postpone the prosecutions referred to, or the filing of the suits, but from information which I have in my files and information which I am sure you have and have referred to in your talks with me, there is ample justification for immediately filing these suits for determination. The interests of the general public, and, particularly, the consuming public, have been so seriously jeopardized by the practices of some of these companies that I am confident the Department of Justice would be playing unfairly with the interests of the general public in failing to proceed at the present time.

"Many newspapermen have been besieging me for information as to the reasons why the suits have been postponed or dropped. I have carefully refrained from comment and carefully refrained from giving out information, but I have reached a point where I do not believe that, in fairness to my public duty, I can continue to delay these matters. Unless you are able to give me controlling or satisfactory reasons to justify the neglect to conduct the prosecutions at this time, I shall probably feel impelled to reopen the hearings on the pending legislation, and I do not believe that I would be further justified in refusing to comment on what appears to be an unjustified attitude on the part of the Department of Justice in bringing to the courts the long and carefully prepared facts which you have assembled.

"I am sure you will not consider this personal in any way, but will be fully aware of the difficulty of my position. I hope those responsible in any way for the delay will realize that the action is not compatible with the public interest."

Mr. Arnold replied:

"I have received your letter inquiring about the delay in starting the proceedings against the major oil companies which have been under preparation by the Antitrust Division for a number of months.

"As a matter of courtesy to the Defense Commission and information to this department, the matter was referred for study as to possible effects on national defense. Their recommendations will be carefully considered with respect to modifying any of the relief sought in the oil suit, if, as a matter of fact, it appears that the interests of national defense are involved. This does not mean a waiver of the antitrust laws. We anticipate no conflict.

"We are convinced that the oil suit will, in a civil proceeding, settle various issues which until now have been the subject of numerous criminal cases all of which the department has won."

●

Aviation Gasoline Bill Reported By House Committee

A BILL to permit the federal Government to take possession of aviation gasoline and lubricating oil has been favorably reported by the House committee on military affairs with the strong support of the War Department. Actually the bill is designed to permit the Army to take over certain shipments of machine tools destined for export but denied licenses under the operation of the new export license-control act, but it is so worded that it could easily be applied to aviation fuels and lubricants if any need for this should arise.

The bill (H.R. 10339) provides that when any material has been denied an export license the president may requisition it and take it over if he determines this to be in the interest of national defense. The president would determine fair and just compensation, and if the owner is not satisfied he would be paid half this sum and could sue the Government for full compensation.

Meanwhile the Division of Controls of the State Department has issued a slight amendment to its instructions to collectors of customs regarding application of the definition of aviation gasoline and materials from which it can be made. The latest instruction states that no license is required for the exportation of kerosene, diesel fuel oil and other fuel oil, butane or propane, but naphtha solvents and thinners may require a license if within the definition of aviation gasoline.

Pipe-Line Activity

Natural Gas Pipeline Awards Contract to Dempsey-Wilson

Dempsey-Wilson Construction Co., Tulsa, has been awarded a contact by Natural Gas Pipeline Co. of America, Chicago, for the construction of 100 miles of 20-in. pipe from the company's trunk line compressor station at Geneseo, Ill., to the vicinity of Belvedere, a point 60 miles from Milwaukee, Wis. This is the first step toward providing gas for Milwaukee. The line is to be laid with solid welded construction. It will be coated throughout and wrapped with craft paper. The contractor will use the firing-line method of welding. Pipe deliveries are expected about August 28. Work will start September 1 and will be completed in 150 days.

Construction will be supervised by Loy Wilson, who will be the partner on the job. J. L. Works is the superintendent. Headquarters will be established at first at Geneseo and will be moved later to Rockville, Ill. Work will be done with one main-line spread. In laying the line, 10 river crossings will be made.

National Refining Will Award Contract Soon for New Line

National Refining Co. will let a contract within a week to build a 57-mile line of 8-in. pipe from the Hoosier station, Cowley County, Kansas, to the company's refinery at Coffeyville, Kans. This will not only increase facilities but it will also provide a system with flexibility for handling Kansas and Oklahoma crudes.

Crossing Permits Granted For Pennsylvania Lines

HARRISBURG, Pa.—Applications just approved by the Water and Power Resources Board included that of the Manufacturers Gas Co. to construct an 8-in. pipe line across 18 streams in McKean County.

Other permits are as follows:

Manufacturers Light & Heat Co. for a 12-in. pipe line across Slippery Rock Creek, Lawrence County.

Manufacturers Gas Co., for an 8-in. pipe line across seven streams in Elk County.

Pennsylvania Fuel Supply Co., for a 10-in. pipe line across nine streams in Clarion County.

Pennsylvania Fuel Supply Co., for a 10-in. pipe line across 11 streams in Jefferson County.

Union Pipe Line Plans Line at Falls City, Neb.

Thomas M. McCullough, president of Union Pipe Line Co., of Centralia, Ill., is negotiating for right-of-way for a pipe-line gathering system from the Missouri Pacific yards at Falls City, Neb., to the Falls City pool. He is prepared to start construction in 10 days and plans to send crude by rail to Minneapolis where it will be blended with Ranch Creek, Wyoming, oil, a higher gravity product.

Under the present plans the line will be ready to take 2,500 bbl. daily. Gravity of the oil in Pawnee Royalty, 1 Bucholz, only well now operated, is 31.9. The posted price is to be 80 cents per barrel.

City of Milwaukee Asks F.P.C. to Intervene

WASHINGTON, D. C.—The city of Milwaukee, through its attorney, Walter J. Mattison, has filed with the Federal Power Commission a petition to intervene in the proceedings concerning application of the Independent Natural Gas Co. (Phillips Petroleum Co. subsidiary) for a certificate of public convenience and necessity for construction of a natural-gas pipe line from the Texas Panhandle to Milwaukee. The intervening petitioner claims interest in the matter on the ground, among other things, that other natural-gas pipe line proposals, including an extension of the Natural Gas Pipeline Co. of America's system, are pending.

In addition to the proposal of Western Natural Gas Co. to construct a line from the Hugoton field in Kansas to Milwaukee, the petitioner states, Natural Gas Pipeline Co. of America has entered into contracts for the construction of a pipe line from its present line at a point near Geneseo, Ill., into Milwaukee. This company, according to the petitioner, claims that it is not subject to the authority or regulation of the Federal Power Commission or any other federal or local state regulatory body and that such a pipe line may be constructed without obtaining a certificate or permit from the commission.

The Independent Natural Gas Co., with principal office at Bartlesville, Okla., has applied to the commission for a certificate relative to its proposed natural-gas pipe line extending from Sherman County in Texas to Milwaukee a distance of 877 miles, at an estimated cost of $28,698,000. Part of the gas would be sold to Milwaukee Gas Light Co., the utility serving that city.

Illinois-St. Louis Natural Gas Is Granted Certificate

SPRINGFIELD, Ill.—The Illinois-St. Louis Natural Gas Co. has been granted a certificate by the Illinois Commerce Commission authorizing it to construct a 6-in. line near Salem, Marion County, Illinois. The line will start at Sunflower Natural Gasoline Co.'s plant and will extend to the plants of Lake Refining Co. and Cascade Refining Co. A gas public-utility business will be transacted along the route of the line. The commission also granted the pipe-line company authority to issue 10,000 shares of its common stock at $1 per share.

Texas Pipe Line Lays Line to Avery Island

HOUSTON, Tex.—Texas Pipe Line Co. is laying a 6-in. pipe line from the Jefferson Lake oil field, Iberia Parish, Louisiana, to its barge-loading terminal at Avery Island, a distance of approximately 10 miles. From this terminal barges have access to the Intercoastal Canal, or by way of Vermilion Bay, to the Gulf of Mexico. Avery Island, also, is the terminal of the company's line from the New Iberia field.

Looping of Gas Lines Proceeds in Kansas

Truman-Smith Construction Co. has been carrying on construction operations near Arlington, Kans., in connection with the looping of Panhandle Eastern Pipe Line Co.'s main natural-gas transmission line. C. S. Foreman Co. has been constructing a loop for Northern Natural Gas Co. near Washington, Kans. Both companies are using 24-in. pipe.

Pipe Line Is Planned For Dorcheat Area

In Columbia County, Arkansas, the McAlester Fuel Oil Co. and J. G. Puterbaugh of McAlester, Okla., are planning a 4-in. oil line from the Dorcheat pool to the pump station of the Standard Oil Co. of Louisiana at Magnolia.

Natural Gas News

Commission Denies Rehearing On Hugoton Gas Field

WICHITA, Kans.—Request by more than 150 independent and large companies for a rehearing on the basic proration order for the Hugoton gas field of Southwest Kansas was denied last week by the Corporation Commission. The field was brought under proration regulations by the commission last January. In its denial order the commission stated: "Granting of a rehearing would not afford the commission any additional information which is not already in the record and would merely tend to disrupt and delay proper administration of the provisions of the statute under which the order was entered."

F.P.C. Orders Inquiry Into Mississippi River Fuel

WASHINGTON, D. C.—A hearing on October 7 to inquire into the formation of a syndicate which it said created and owned the Mississippi River Fuel Corp., into the extent of the company's affiliation with companies from which it buys natural gas and the effect of the affiliation on the rates it pays for the gas has been ordered by the Federal Power Commission. The commission said that voting stock of the Mississippi company was held by United Gas Corp., 46.65 per cent; Standard Oil Co. of New Jersey, 22.39 per cent; Columbian Carbon Co., 17.02 per cent; and United Carbon Co., 13.43 per cent.

The commission likewise added that the company bought its gas from the United Gas Pipe Line Corp., controlled by United Gas Corp.; the Southern Carbon Co., controlled by Columbian Carbon Co.; Interstate Natural Gas Co., Inc., of which Standard of New Jersey owned 53.97 per cent of the voting stock; and Hope Producing Co., controlled by the New Jersey company.

"The Mississippi River Fuel Corp. has constructed a natural-gas pipe line for the corporations controlling it," the commission announcement said, "and has acted as their agent in the transportation and sale of natural gas in interstate commerce."

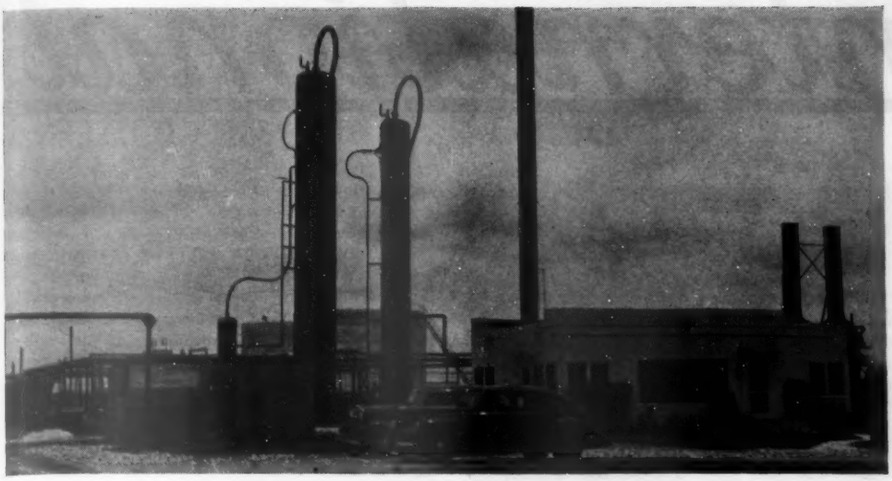
Contracts between Mississippi River Fuel and the companies which furnished it with gas, the announcement continued, "are identical in their terms, conditions, rates and charges."

Carbon-Black Sales Reach All-Time Record in 1939

Sales of carbon black, a product of natural gas used in large quantities to make tires stronger, and in ink, paint, and other consumption goods, rose to an all-time record total of 560,533,000 lb. in 1939, an increase of 36 per cent above 1938, according to the U. S. Bureau of Mines. Domestic sales increased 46.5 per cent to 356,705,000 lb. Exports were 203,828,000 lb. Of the domestic sales last year, 89 per cent was bought by rubber companies, 6 per cent by ink companies, 2 per cent by paint companies, and 3 per cent by miscellaneous users. Production of 525,166,000 lb. also set an all-time record, with more than 86 per cent coming from Texas alone. Other producing states are Kansas, Louisiana, and Oklahoma. The bureau estimated that 347,270,000,000 cu. ft. of natural gas were utilized to manufacture last year's production of carbon black, with an average yield which increased to 1.51 lb. per 1,000 cu. ft. of gas.

Edmonton Rate Negotiations Being Conducted

EDMONTON, Alta.—Negotiations for a revision of the Edmonton natural-gas rate are being conducted between city officials and officers of the Dominion Gas & Electric, Ltd., and Northwestern Utilities, Ltd., which handles the local distribution.



Newly completed 3,000-bbl. refinery at Miraux, La., owned by General Oil Corp.

Refinery Expansion

Danciger Converting Cracking Unit, Installing Poly Unit

CHICAGO.—Following the signing of a license agreement with Universal Oil Products Co., Danciger Oil & Refineries, Inc., of Tulsa, is converting the cracking unit in its refinery at Pampa, Tex., to operate the Dubbs cracking and reforming processes. The license agreement also covers the company's cracking operation at its Longview, Tex., refinery.

As revamped, the cracking unit will be of the Dubbs 2-coil selective type, residuum flashing, with stabilizer and absorber equipment. A U.O.P. catalytic polymerization unit is also being installed. The rated capacity of the cracking unit will be 3,000 bbl. per day of topped crude and reforming capacity 900 bbl. a day. The poly unit is expected to process about 620,000 cu. ft. of cracked gas a day to produce polymer gasoline. At present the Pampa refinery is running about 6,000 bbl. a day of Gray County, Texas, crude.

Standard of New Jersey Launches Vast Modernization Program

NEW YORK, Aug. 20.—A refinery modernization and terminal-expansion program involving expenditure of nearly $3,000,000 was launched this week on the Atlantic Coast of New Jersey by Standard Oil Co. of New Jersey. The program calls for expenditure of $2,500,000 in modernization of the company's Bayway refinery. The facilities to be installed will be designed chiefly for production of motor gasoline and are expected to incorporate the new refining processes, development of which company technicians have played an important part.

Announcement of the program did not stipulate that refining facilities to be added were directly related to the defense preparation but it is obvious that general objectives will be enhanced.

Improvement of terminal facilities on the New Jersey coastline by Standard of New Jersey, announced simultaneously with the Bayway refinery program, calls for expenditure of $478,000 at Linden, N. J. The Linden project carries an appropriation of $415,000 for construction of a 30 by 575-ft. pier and tanker dock in Arthur Kill, one of the numerous bays of the New Jersey intercoastal system.

The Standard of New Jersey's Bayway refinery is the largest on the North Atlantic Coast and one of the largest in the United States. The Bayway, Bayonne, and Linden plants have a rated capacity of about 120,000 bbl. daily. For a period of years there has been a gradual concentration of Standard of New Jersey refining operations at Bayway and a simultaneous retraction of activity at Bayonne. The Bayway and Bayonne refinery sites have been practically merged into one over a period of years. The Bayway refinery has been the proving ground for several Standard of New Jersey processing developments, including hydrogenation, catalytic cracking and reforming, polymerization, alkylation, isomerization, and solvent refining of lubricating oils.

Cosco to Reopen Wynnewood Refinery September 1

Cosco Refining Co. is reconditioning its plant at Wynnewood, Okla., with plans for reopening it on September 1, when it will take about 2,000 bbl. from the Tussy field. The plant, having a daily capacity of 2,000 bbl. and containing a 1,200-bbl. cracking unit and asphalt facilities, has been closed since late in 1938.

Will Start Operation of Cracking Plant September 1

Operation of a 2,000-bbl. daily cracking plant will start September 1 by Worth Refining Co., Inc., which has a refinery at Blue Island, Ill.

The Worth company's plant has a crude capacity of 6,000 bbl. daily and operators have been running approximately 5,000 bbl. daily for several months.

Continental Oil Applies for Permits at Lake Charles

Continental Oil Co. has applied for a War Department permit to lay two pipe lines across the Calcasieu River, Louisiana, near Lake Charles, La., where the company is engaged in constructing a refinery. The two lines will be of 6 and 8-in. pipe.

Midwest Refineries Files Registration Certificate

Midwest Refineries, Inc., of Alma, Mich., has filed a registration statement with the S.E.C. for 35,000 shares of $1.50 dividend cumulative convertible preferred stock, $25 par, and 315,000 shares of $1 par common stock. Of common stock registered, 140,000 shares are to be issued pursuant to merger agreement with the Imperial Refining Co. in exchange for preferred and common stock of that company.

Proceeds of preferred-stock sale will be used by Midwest Refineries to pay obligations of Imperial and to provide additional working capital of $386,688 which may be used to pay for construction of a new unit at the Alma refinery and for construction of a cracking unit at the Imperial Refining Co. plant.

Cosden to Move Office to Big Spring About September 1

FORT WORTH, Tex.—Cosden Petroleum Co. is nearing completion of its modern two-story office building at its Big Spring, Tex., refinery and on or about September 1 will close its office at Fort Worth and thereafter be located at Big Spring. The move will be a consolidation of the general office with the field office, and is expected to result in increased operating efficiency. The company is refining about 11,000 bbl. daily at its Big Spring refinery, which has a capacity of 14,000 bbl., while its 2,500-bbl. capacity plant at Graham, Tex., is processing 1,000 bbl. daily.

Bareco Adding Skimming Unit

WICHITA, Kans.—Bareco Oil Co. is adding a new 2,500-bbl. skimming unit at its refinery here which will increase the plant's crude capacity from 5,000 to 7,500 bbl. daily.

Natural Gasoline

Major Expansion Program at Southern Minerals Plant

CORPUS CHRISTI, Tex.—The Southern Minerals Corp. is nearing the termination of its third major expansion program of its local gasoline plant. The plant takes gas from the Saxet field and in the construction program which began in May and will terminate early in September, the company will have added one 400-hp. 2-cycle engine-compressor unit for 250 tons of additional refrigeration and gas compression; one 1,500-lb. working-pressure absorber having a rated capacity of 30,000,000 cu. ft.; one 250-lb. working-pressure reabsorber having a rated capacity of 4,000,000 cu. ft.; one five-bay cooling-tower extension; and one eight-bay open-spray pit. The 1,500-lb. absorption unit includes one 130-hp. 2-cycle engine directly connected to a duplex plunger pump. All construction inside the plant yard should be completed by September 15.

A small gathering and distribution system will be constructed by Southern Pipe Line Corp. for the 1,500-lb. gas to and from the plant.

Davis Co.'s Recycling Plant Still Threatened by Crater

HOUSTON, Tex.—W. R. Davis & Co.'s new recycling plant in the Alice field of Jim Wells County, Southwest Texas, which was to have been placed in operation about August 20, continues to be threatened by a steadily widening crater in the plant yard that resulted from a 5,100-ft. distillate well blowing out through casing and injecting high-pressure gas into the shallow water horizon. Difficulty with the gas-distillate well, located about 300 yd. from the plant, began earlier this month and soon afterward the water well blew out and craters appeared in the plant yard. Efforts to repair the gasser have proven unsuccessful.

The wild water well has buried the plant yard beneath a layer of mud, water, and rock and has damaged the roof of the main office building by rock tearing holes through it. The mud has also seeped into the pump house.

Natural-Gasoline Plant Planned For Rogers & Rogers Field

FORT WORTH, Tex.—First natural gasoline and recycling plant for the Rogers & Rogers field, west of Nocona in Montague County, North Texas, has been announced by Lesh & McCall, operators in the field. The plant will have a daily capacity of 15,000,000 cu. ft., part of the residue to be sold to the City Gas Co. to supply the town of Nocona. The gas company reportedly will take 1,000,000 cu. ft. daily, with the major portion of the remainder to be used in recycling operations. Site of the plant is expected to be in the east part of the field, possibly on the Mary Reed farm.

International

India . .

Will Drill Test In Dhulian Field

WHILE no information on production and sales is being issued during the war, the Attock Oil Co., Ltd., at its recent annual meeting, released some information on drilling operations including the announcement of its intention to drill a test below the present producing horizon, at 7,600 ft., of the Dhulian field in Punjab, India. This test will be drilled as a part of the current year's program. The company also announced the drilling of four wells to the producing formation and a fifth which has been cemented above it. Activities in the Khaur field are restricted to pumping though a deep test in this area continues to produce on a small scale. Further Dhulian field drilling is expected to be concentrated in the southern end of the field, the only side on which the structure has not been defined.

Apparently current production is meeting all requirements since it was announced that exploration of a "promising area" will be undertaken only when the Dhulian production begins to fail. The deep test at Jhatla has been discouraging though it is planned to drill deeper and it is possible that other tests will be drilled in this area.

Argentina . .

Tupungato May Become Argentina's Largest Field

A PREDICTION that the Province of Mendoza in the western part of Argentina will develop into the country's richest oil-producing area has been made by Mario L. Villa, president of Yacimientos Petroliferos Fiscales, the Government operating company, in a report to the Ministry of Agriculture.

Engineers representing Y.P.F. have studied the financial and mechanical requirements of a pipe line from the Province of Mendoza to the eastern coastline of Argentina. Recommendations of the engineers are now before the Argentina Congress.

The Tupungato field has been subjected to increased exploitation since a prolific producing horizon, said to be one of the thickest sand sections in South America, was opened on a commercial basis. Existence of oil in the Tupungato field has been known for about 7 years but only recently it was learned that the field has the qualifications of a major reserve. Production is obtained from about 5,800 to 6,500 ft. Reports have reached this country that the producing section has a thickness of 500 ft. in some parts of the field.

No details in Mendoza production have been received in recent months, but reports from Buenos Aires indicate that the increase in output has been greater than existing transportation facilities can accommodate. The Tupungato field is dependent on tank-car transportation. Increased production has created a problem of railway congestion. The state company proposes construction of a pipe line to San Lorenzo in the Province of Santa Fe where deep-water transportation is available. Y.P.F. engineers calculate that the cost of transportation by pipe line will amount to only 2.7 pesos per cubic meter, or a little more than 11 cents per barrel. The cost of shipping to the port of San Lorenzo by tank car is about 42 cents per barrel.

The pipe line proposed by the Y.P.F. engineering staff would have capacity of 48,000 bbl. daily.

Argentina produced approximately 50,500 bbl. daily in 1939 and the nation consumes about 90,000 bbl. daily. If the Tupungato field production increases to the capacity of the line under consideration the nation will approach self-sufficiency in petroleum. Demand for motor fuel is growing rapidly in Argentina.

The steady expansion of Argentina's highway system has resulted in a wider use of motor vehicles. There were 405,900 motor vehicles in use throughout Argentina last year, including 295,000 passenger cars, 100,900 trucks and 10,000 buses.

In the decade following 1928, consumption of gasoline was doubled, amounting to 318,361,000 gal. in 1938 yielding tax revenue to the Government of 38,000,000 pesos or about $11,400,000 which is used in that country exclusively for construction of highways.

Australia . .

Suspend Motor Car Imports Except National-Defense Units

IMPORTS of all motor cars, excepting trucks or units required for national defense, have been suspended from September 1, 1940, to June 1, 1941, by the Australian Chamber of Automotive Industries. Benefits of the restrictions include conservation of foreign exchange and the possible adoption of more liberal gasoline rations which are now rigidly enforced for the purpose of conserving foreign exchange.

Mexico . .

June Crude-Oil Production Averages 126,965 Bbl. Daily

CRUDE-OIL production in Mexico increased to 3,808,967 bbl. in June, a daily average of 126,965 bbl. The gain in production over 3,134,728 bbl. in May amounted to 20 per cent, reflecting to some extent at least the increase in exports to the United States.

The greater production total was supplied entirely from the Poza Rica and South Tampico fields. North Tampico and the Isthmus fields suffered declines. The South Tampico district produced 565,490 bbl. in June, an increase of 185 per cent over the yield of 198,129 bbl. in May.

Production by districts for the months of May and June, in barrels of 42 gal., follows:

District—	June	May
North Tampico	464,756	536,084
South Tampico	565,490	198,129
Poza Rica	2,306,342	1,926,268
Isthmus fields	472,379	474,247
Total	3,808,967	3,134,728
Daily average	126,965	101,120

The Mexican Government oil administration has made another payment of $1,000,000 to Sinclair Pierce Oil Co., Mexican subsidiary of Consolidated Oil Corp. The payment was the second made and leaves a balance due Sinclair of $6,500,000 on the cash expropriation settlement for $8,500,000.

President Cardenas during a long meeting with representatives of the petroleum workers' syndicates and the government oil administration last week made it clear that the dismissal of 3,000 employes of the total of 18,000 in the industry, wage reductions and other economies must be accepted in the interest of the nation as a whole. The unions have opposed the economies ordered into effect by the president, although the nationalized industry operated at a deficit of 68,000,000 pesos (about $13,600,000 at the present value of the peso).

Brazil . .

Will Not Store Imported Products

THE Brazilian Government has rejected the proposal of the Ipiranga, S. A., Cia. Brasileira de Sul, to store in tanks of the refinery petroleum products imported from Mexico and Uruguay. The decision was made on the grounds that the storage tanks were admitted free of duty as a part of the refinery, and not for the storage of imported products.

Brazil is one of the leading South American customers for petroleum products from the United States, the Netherland West Indies and Colombia.

East Indies . .

Preparations Made to Destroy Oil Properties

HIGH army officials in the Netherland East Indies have informed the volksraad (legislature) that preparations have been made to destroy harbor works, oil fields, stocks and refineries in an emergency.

The Netherland East Indies produce about 180,000 bbl. of crude oil daily and have refining capacity of about 160,000 bbl. daily on the islands of Borneo, Sumatra and Java.

All women, children and men nonessential to conduct operations have been withdrawn from the potential "danger spots" in the fields. Some of the key men in the operations of Standard-Vacuum Oil Co. and the Royal Dutch-Shell group of subsidiaries have been recalled to home offices.

Dominican Republic . .

Company Abandons Drilling Operations

THE Dominican Seaboard Oil Co. has abandoned drilling operations in the Dominican Republic after abandoning a wildcat prospect at 7,500 ft. on the El Mogote anticline, a part of the Higorita concession.

The drilling machinery and crew engaged in exploration of concessions in the Dominican Republic will be returned to the United States and activity in the immediate future will be confined to exploratory studies.

The Dominican Seaboard succeeded in developing shallow production in one well on the Maleno structure. The production from about 475 ft. contained a large percentage of lubricating distillates but little volatile material.

Tuttle Named Standard of California Vice President

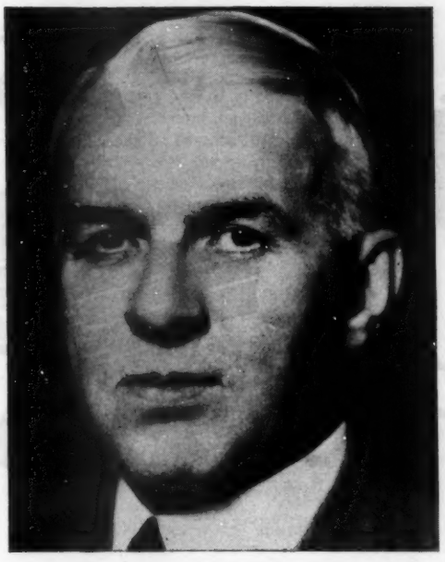
SAN FRANCISCO, Calif.—The board of directors of the Standard Oil Co. of California on August 13 elected J. H. Tuttle a vice president to fill the vacancy created when H. D. Collier was elected president succeeding W. H. Berg, who died recently.

J. H. MacGaregill, general manager of marketing, was elected a director filling the vacancy created by the death of Mr. Berg. On becoming a member of the board, Mr. MacGaregill retains his position as general manager of marketing.

At the same time B. W. Letcher, general auditor and assistant secretary, was elected secretary and comptroller, functions hitherto carried on by Mr. Tuttle.

Mr. Tuttle entered the service of the company in the home office in San Francisco in July 1903. In 1918 he became assistant general auditor, and general auditor in 1920. In 1921 he was given the additional title of assistant secretary, and in 1922 became secretary. In 1926 he was appointed secretary and comptroller. He was elected to the board of directors in December 1930.

Mr. MacGaregill entered the service of Standard Oil Co. 23 years ago, as warehouseman at San Francisco, later transferring to service-station salesman. He progressed through many positions in the sales department until, upon the organization of Standard Stations, Inc., he was elected a director of that subsidiary and appointed manager of the merchandising department. In January 1932 he was appointed general manager and chairman, management committee, Standard Stations and in 1934 was elected vice president of Standard Stations. In January 1938 he was appointed general manager of marketing of Standard Oil Co. of California.



J. H. TUTTLE

Mr. Letcher entered the service of the company in 1911 as a clerk in the manufacturing department. In due course he was promoted to chief clerk in the general office and in 1926 general auditor and assistant secretary.

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Navy Department Takes Formal Possession of Terminal Island

The Navy Department has formally taken possession of approximately 329 acres of land on Terminal Island Los Angeles and Long Beach, Calif., in part overlying the submerged Long Beach oil pool, and legal sharpshooters are now trying to figure out whether or not this action has any bearing on the Navy's long-standing desire to assert federal ownership to all subocean oil deposits.

The land was conveyed to the U. S. Government in fee simple through a decree of Judge Paul C. McCormick of the central division of the U. S. District Court for the southern district of California on August 9. The action was based on a statute which permits immediate taking of the land, with settlement of payment in subsequent litigation. The sum of $300,000 was deposited with the court as payment, but former owners may file claims for higher prices if they are not satisfied. The Navy will proceed at once to construct a graving dock and other naval works on the site.

Rep. Lee E. Geyer of Los Angeles County issued a statement in which he asserted that while the Navy is taking over only the uplands it intends to make use of adjacent submerged lands and that one object of the proceedings is to get around the deadlock in Congress over legislation directing the Justice Department to bring suit to assert federal title to submerged oil lands.

Navy officials declare that their only interest is to construct needed shore works for purposes of national defense. But persons looking for ulterior motives and devious devices reason this way: The Navy is taking over the land in fee simple, which means subsurface mineral rights and ownership of the oil wells now operating on the beach in the area. If the Navy has ownership of the beach and the producing wells it can effectively prohibit further production from this part of the submerged pool regardless of the legal controversy over its ownership.

DEATHS

FRANK ALBERT SCHNEIDER, 51, driller for the Crude Oil Co., Dayton, Tex., died at his home in Dayton last week. His widow survives.

THOMAS J. POORE, 73, for 25 years employed with the Burma Oil Co. in Yenangyuang and other fields, died at Pike's Bay, Ont., on August 12.

WILLIAM A. BURNS, 52, widely known in the petroleum industry in California, died last week. He was sales manager for the Petrol Corp. His widow and a son survive.

C. L. TINDALL, construction engineer for the Gulf Oil Corp., stationed in Venezuela, died at the company hospital in that country early this month. He had been in Venezuela 3 years. His widow and a son survive.

RICHARD D. ROBEY, 38, owner of Robey Drilling Co. of Tulsa, was killed in an automobile accident near Salem, Ill., on the night of August 19, while supervising his Illinois drilling operations. Surviving Mr. Robey are his widow and three children, Richard D., 3d, age 7; Elizabeth Kent, age 3; William Paxton, age 9 months; his mother, Mrs. R. D. Robey, Sr., and a sister, Eleanor Robey of New Iberia, La.

ALLEN D. KING, 55, independent oil operator of Shreveport, La., died last week at his home following a sudden heart attack. Mr. King in 1931 organized the Bi-State Oil Co., which he operated until his death. Mrs. King and a daughter are survivors.

FRANK BRYANT, retired general purchasing agent of the Standard Oil Co. of California, died at Glendale, Calif., August 17. Mr. Bryant was active for many years in the National Association of Purchasing Agents, and won the first award of the grand old man of oil purchasing at the 1940 International Petroleum Exposition in Tulsa.

HUMPHREY F. TRACY, Petrolia, Ont., employed by the Premier Oil Co., died recently in the Trinidad, British West Indies, fields. He had spent 32 years in foreign drilling.

CHARLES LYMAN STARK, 82, retired employe of the Minard Run Oil Co., died at his home at Aiken, Pa., on August 9. He retired in 1930 after 33 years of service with the company. He leaves two sons and two sisters.

JOHN E. WOLFF, 84, Pasadena geologist, died last week from heart failure induced by overexertion. He had been missing for 27 hours when a searching party found him in his automobile which was stalled in sand in the Mint Canyon district 30 miles east of Lancaster. Dr. Wolff was assistant geologist of the U. S. Geological Survey for several years, later becoming associated with the geological division of Harvard University.

VINCENT BLOSS WARD, 75, former secretary-treasurer of the Globe Petroleum Co., and more recently associated with the Elk Refining Co., Charleston, W. Va., died at his home in Palm Beach, Fla., August 11. He entered the oil industry in 1889 as manager of the Manhattan Oil Co. storage plant at Elizabethport, N. J., designed and constructed the Island Petroleum Co. refinery at Neville Island, Pittsburgh, in 1900 and, with associates, developed Wacotock Oil & Gas Co. properties in West Virginia in 1920.

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To Build New Laboratory To Replace One Burned

Fire, following several "flashes" of vapors, gutted the main laboratory of the Wolverine-Empire Refining Co., Oil City, Pa., August 12. The loss, which was covered by insurance, was estimated at $20,000. Construction work on a new laboratory will be started immediately.

THE MARKETS*

CRUDE OIL: Declining production in Illinois is imparting a strength to the crude-oil market there that caused an advance there August 21 of 10 cents per barrel, equalizing delivered costs against Mid-Continent and Texas supplies. Crude-market strength springing from the decline of Illinois production spreads to practically all other producing areas in proportion to desirability of the crude and its distance from refineries of purchasers. California is the exception where crude prices are under the cloud of weakened-products markets.

REFINERY: Distillate fuel-oil demand is following seasonal expectations and while current prices are unchanged they are moving into a position presaging an early advance. Refinery and natural gasolines are dull as a general rule. Interrefinery buying of motor fuel is gaining to meet the temporary bulge of Labor Day demand.

TANK-WAGON AND POSTED DEALER: The only change of major importance is the planned reduction of dealer and consumer prices 1 cent in Minnesota on September 1 when Standard Oil Co. of Indiana will pass along abolishment of an emergency tax of that amount. Standard Oil Co. of Indiana raised all subnormal tank-wagon prices in Kansas and Missouri, excepting the St. Louis metropolitan area, on August 21. The advances ranged up to 0.05 cent per gallon and down to the margins by which individual markets were below normal.

FINANCIAL: Oil securities again lost ground in dull trading. Average of 30 representative stocks for the week ended August 17: High, 21.19; low, 20.38; close, 20.56. Week ended August 10: High, 21.38; low, 20.70; close, 21.07.

*Detailed information in Market Section.

"Hey, teacher . . . . my Pop says MISSION PLUG VALVES will last as long as you have."

"My Pop's a driller and he says with grease grooves all around both port openings and 'cause the line pressure is always forcing the grease into the grooves, his common sense tells him Mission valves 'll last for years. He says he likes them 'cause they always hold pressure and turn easy, too."

- *Hundreds are now in use on drilling rigs, flow lines, Christmas trees and in repressuring plants. Many producers report three years of hard service without failure.*
- *Manufactured in 2", 3", 4" sizes — in three grades to meet working pressures of 2000, 3000 and 5000 lbs.*
- *Available at leading oil well supply warehouses. Install Mission valves in your most difficult conditions.*

MISSION MANUFACTURING CO.
HOUSTON, TEXAS NEW YORK EXPORT OFFICE: 30 ROCKEFELLER PLAZA

Slaughter, Duggan, Dean Fields Join for West Texas' Largest

(Continued from Page 26)

the comparatively long 6-year payout, based on present crude prices, a substantial profit is believed possible from the field. Whether wells will flow for 6 years is thought doubtful by some geologists since there is comparatively no gas pressure present in the field. Large acid treatments at the time of completion and careful production practices throughout the life of the well are both essential to commercial production in the field.

Unlike practically all other West Texas fields of any size, the Slaughter-Duggan-Dean field is without a sufficient pipe-line outlet. Until last year there was no outlet at all except by means of truck down to the Bennett field. Last year Motor Fuels Corp. erected a 5,000-bbl. daily capacity refinery at Levelland just north of the Slaughter area and laid connections to many of the wells in the two largest areas. At the present time the refinery is operating at about two-thirds capacity, due to repairing and remodeling, and almost half of the completed wells in the fields are without any connection.

Early this year the Texas-New Mexico Pipe Line Co. announced intentions of building a 110-mile, 8-in. line from the Duggan and Slaughter areas south to Midland, where oil would be entered into Atlantic Refining Co.'s trunk line to the Gulf Coast. Construction work on this line is expected to get under way in the near future.

Under the fluctuating 30-to-40-bbl. daily allowable for wells in the field during the past year, and in view of the fact that a sufficient outlet is not yet definitely in sight, drilling is forecast at a minimum during the coming months. The 5,000-ft. wells in an area of small allowable and long payout does not seem attractive to large leaseholders in the field. With the fields now apparently joined and the area more or less proven for production, little more than protective offsets are expected to be drilled until a pipe line is laid into the area.

●

Oil Imports for Domestic Use Below Treaty Quotas

(Continued from Page 29)

regular import duty rate of 21 cents per barrel and there is no legal limit on such total imports under the trade agreement. Bonded fuel-oil imports, crude or products brought in for refining-in-bond are not affected by the trade agreement. Gasoline and kerosene are not affected by the trade agreement and are subject to an import duty of 2 cents per gallon. There have been no imports of gasoline and kerosene for domestic consumption since the excise tariff was enacted in June 1932.

Imports of petroleum for domestic consumption from all sources have been less than half of the 1940 reduced-tariff quota as shown in the following table:

DUTY-PAID IMPORTS

(In barrels)

	1940 quota	Half of quota	Actual first 6 months' imports
Venezuela	44,500,348	22,250,174	16,025,192
Netherlands	12,564,076	6,282,038	8,479,948
Colombia	2,475,690	1,237,840	182,278
Others	2,351,896	1,175,948	5,537,916
Total	61,892,000	30,946,000	30,225,334

Table 1 and accompanying chart show that imports for the first 6 months from Venezuela and Colombia were 6,126,127 bbl. lower than the pro rata part of the 1940 quota. Imports from the Netherland West Indies are higher than the quota but since the islands of Aruba and Curacao are refining centers for Venezuelan crude the two sources can be considered together for practical purposes. The combined imports for the first 6 months from Netherlands and Venezuela of 24,505,140 bbl. are 4,027,072 bbl. less than the aggregate of quotas for the two sources.

Imports from other countries, most of which came from Mexico were almost 2½ times the quota for the entire year in the first 6 months alone.

Imports of petroleum and products fall into four classifications:

1. Duty-paid, that is petroleum intended for domestic consumption and subject to excise tax under the Revenue Act of 1932, modified by the Venezuelan trade treaty as concluded last year.

2. Duty-paid imports subsequently re-exported in whole or in part. On imports on which an excise tax has been paid the importer is entitled to a refund if the products are re-exported.

3. Bonded imports: These are principally in the form of fuel oil for bunkering vessels in foreign or intercoastal trade. They are exempt from import duties and excise taxes.

4. Imports of crude or unfinished products for processing and re-exporting as finished products. In various tariff acts, provision has been made for refining-in-bond. The products do not enter in domestic trade. Imports of bonded oil consist almost exclusively of heavy fuel oil for bunkering ships or crude to be refined for the foreign trade. Most of the petroleum imports are discharged along the Atlantic Coast, although, as can be seen in Table 2 receipts at Gulf Coast ports have nearly doubled as have those at Boston and "other Atlantic" ports.

●

Industry Is Ready for Peak Consumption of Fuel Oil

(Continued from Page 23)

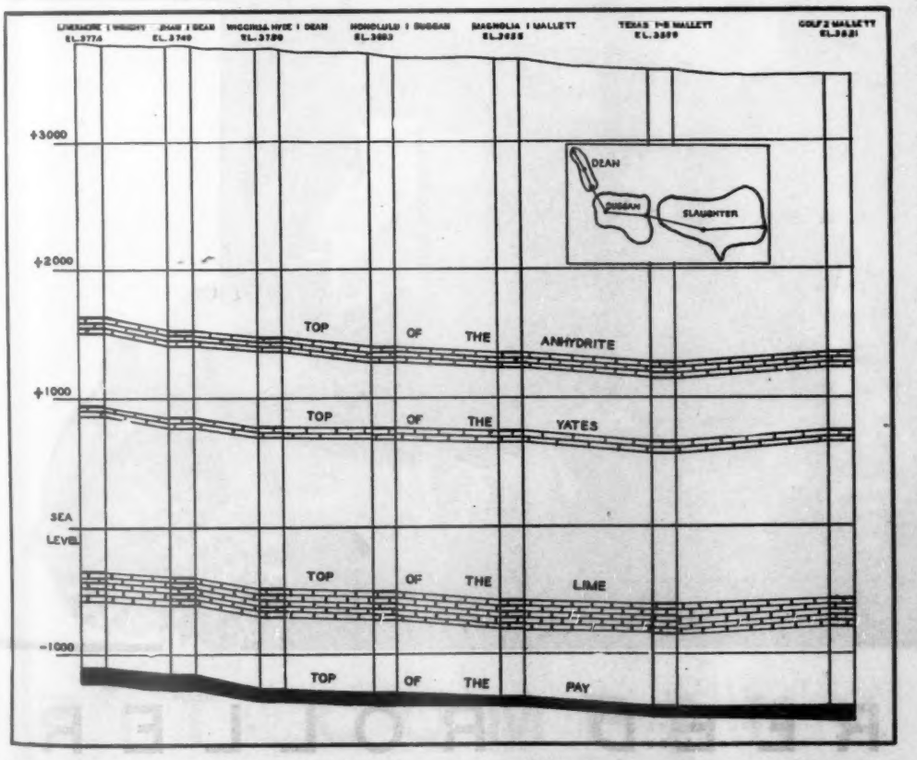
fuel oil is the requirements of railroads which are consistent users of large volumes ranking just under shipping and general industry as shown in the following table:

Year—	Railroads	Manufacturing industries	Shipping
1933	48,305,000	51,500,000	70,445,000
1934	52,581,000	56,942,000	69,262,000
1935	55,651,000	63,576,000	74,581,000
1936	61,727,000	71,326,000	80,324,000
1937	69,458,000	74,798,000	84,990,000
1938	57,829,000	60,038,000	74,266,000

The above data represent the latest official breakdown available from government sources, but it is estimated unofficially that railroads used only around 53,000,000 to 54,000,000 bbl. of fuel oil in 1939. The use of diesel fuel by railroads, the product consumed by locomotives with which this survey is directly concerned, has been growing rapidly and a continuation of this trend is indicated by many factors. Diesel fuel consumed by railroads grew from 610,000 bbl. in 1937 to 809,000 bbl. in 1938, a gain of more than 32 per cent. This, in itself, is relatively unimportant, but there were 251 new diesel-electric locomotives shipped by domestic builders last year, representing 70 per cent of all engine shipments to United States railroads.

During 1938, manufacturing industries, including mines and smelters used 1,384,000 bbl. of diesel fuel, but since that time there has been broad installation of this form of power because of two important factors. In the first place, diesel-engine manufacturers have improved their power units, quality making them less selective as to fuel and lubricating-oil requirements. None of the diesel-engine builders now specify a particular fuel, extensively broadening the field of application to rural sections where distribution costs previously made impossible the sale of fuels meeting exacting specifications.

Simplification of the refueling problem doubtless contributed heavily to last year's sharp increase in purchase of diesel power. Diesel Power & Diesel Transportation shows that purchases in 1939 aggregated 2,144,000 hp., a banner year, even exceeding 1937 and comparing with 1,600,000 hp. placed in service during 1938.



Cross-section from the east side of the Slaughter area, through the Slaughter and Duggan areas and up through the Dean area

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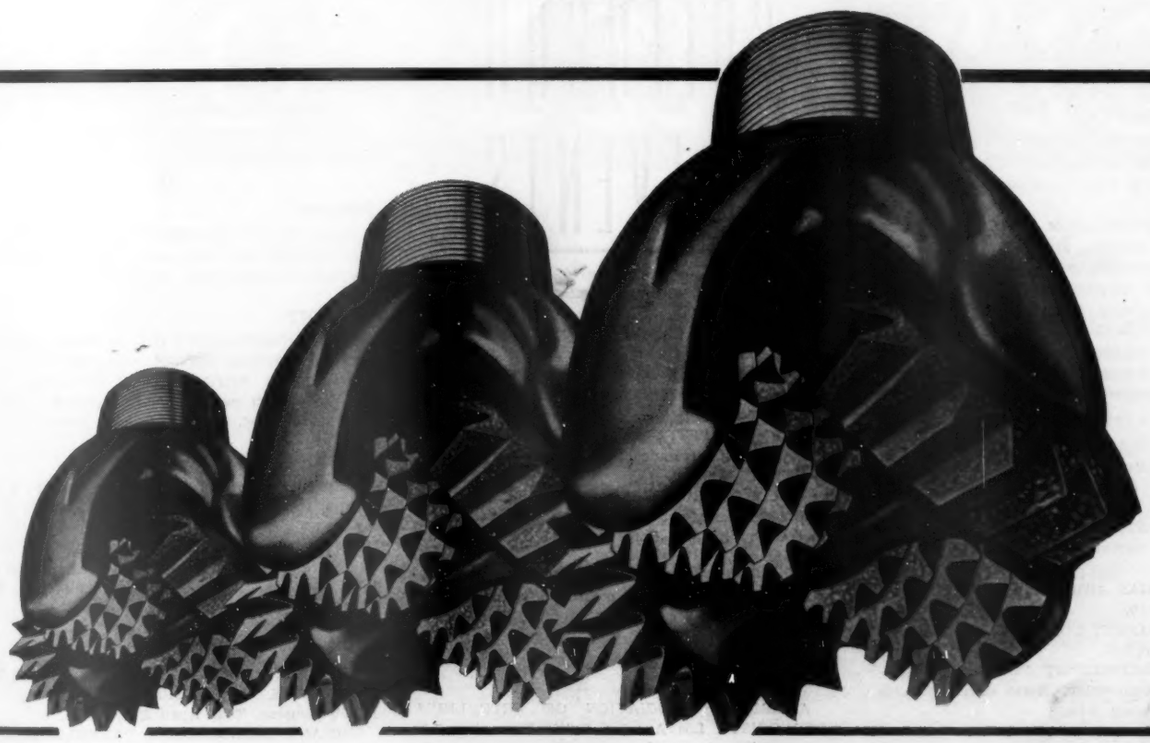

BIT COMPANY

HOUSTON, TEXAS

PROGRAMS AND MEETINGS

West Texas Geological Society Meeting Attended by 200 Geologists

With 200 geologists in attendance, and with a program of eight papers on a wide range of subjects, the fall meeting and homecoming of the West Texas Geological Society was held at Midland, Tex., last Saturday. Morning and afternoon sessions were devoted to the reading of papers, while a barbecue and smoker Saturday evening brought the meeting to a close.

Speakers and their subjects were as follows: Leo Hendricks, University of Texas, "A Study of the Stratigraphy of the Ellenburger Formation"; Roscoe Simpson, San Angelo, "The Page Field in Schleicher County, Texas"; Ronald K. Deford, Midland, "Insoluble Residues in the White Horse and Salado of New Mexico"; R. L. Cannon, San Angelo, "Section Encountered in the Krupp Wells, Hudspeth County, Texas"; Cary P. Butcher, Midland, "Photographs of the Sacramento Mountains"; Frank E. Lewis, Midland, "Position of the San Andres Group, West Texas and New Mexico"; R. T. Cox and N. T. Winter, Midland, "White Horse-San Andres Contact On and Adjacent to Central Basis Platform"; Taylor Cole and C. M. Linehan, Midland, "Insoluble Residue Study of the Holt Pay, Ector County, Texas."

Pacific Coast Gas Association Meeting September 17-20

An attractive and novel program of the forthcoming annual meeting of the Pacific Coast Gas Association has been sent to members. The program includes sessions on domestic sales, production and transmission, accounting, manufacturing, distribution, sales and advertising. In addition to the business sessions, the convention will feature the annual golf tournament, skeet shoot and banquet. The principal speaker on the program is Walter Beckjord.

Headquarters of the convention will be Hotel Del Coronado, Coronado, Calif. The meeting will get under way September 17 at 2 p.m. and will close with the golf tournament and skeet shoot Saturday morning, September 21.

California Chapter A.I.M.E. Will Meet October 17-18

C. P. Watson, vice president of Seaboard Oil Corp. and program chairman of the California chapter, Petroleum Division, A.I.M.E., has completed the final program for the fall meeting to be held at the Ambassador Hotel Auditorium in Los Angeles, October 17-18. The 2-day session will be followed by a banquet. Harry Stolz, chairman of the southern California section, will preside at the banquet and C. J. Coberly, national assistant chairman of the Petroleum Division, A.I.M.E., will also attend. Last year's attendance was the largest ever attained and the meeting covered topics of outstanding importance. An equally diversified program is said to be under way and the 1940 attendance and registration is expected to surpass last year's record. R. E. Pence, of the umpire's staff, is in charge of publicity and is assisting the program chairman. Edward Trostel, of Union Oil Co., is arrangements chairman. The four morning and afternoon technical sessions will have as chairmen Joseph Jensen, of Tide Water Associated Oil Co.; Hallan N. Marsh, of General Petroleum Corp.; R. P. McLaughlin, of Dominguez Oil Fields Co., and W. R. Geis, of Union Oil Co.

Kansas Geological Field Trip To Include Black Hills Area

The Kansas Geological Society will hold its fourteenth annual field conference in the Black Hills of South Dakota, and the Hartville uplift, Laramie Mountains and Medicine Bow Range of Wyoming, August 26 to September 1. This conference is held with the cooperation of the University of Wyoming and the Nebraska Geological Survey. One of the primary purposes of the trip will be to attempt to correlate the outcropping beds with the subsurface units encountered in drilling. Permo-Pennsylvanian and pre-Pennsylvanian beds will be studied in greatest detail. Outcrops ranging from pre-Cambrian to Tertiary will be seen.

Dr. S. H. Knight, state geologist and head of the department of geology, University of Wyoming, has consented to act as director of the conference. He will be assisted by H. D. Thomas, University of Wyoming; G. E. Condra, state geologist, and E. C. Reed, assistant state geologist, respectively, of Nebraska; E. P. Rothrock, state geologist of South Dakota, and J. J. Runner and A. K. Miller of the University of Iowa. The conference will convene at Rapid City, S. D.

Shreveport Selected for District A.P.I. Meeting

Officers of the southwestern district of the American Petroleum Institute's Division of Production have selected Shreveport, La., for the 1941 spring meeting of the organization. The meeting will be held February 27 and 28, 1941, in the Washington-Youree Hotel. Chairman of the program committee is E. P. Hayes, of the Texas Co.

CALENDAR OF EVENTS

August

MISSISSIPPI OIL EXPOSITION, Yazoo City, Miss., August 28-29.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Spokane, Wash., September 3-5.

AMERICAN CHEMICAL SOCIETY, Detroit, Mich., September 9-13.

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

SOCIETY OF AUTOMOTIVE ENGINEERS, national tractor meeting, Schroeder Hotel, Milwaukee, Wis., September 24-25.

NATIONAL LUBRICATING GREASE INSTITUTE, annual convention, Stevens Hotel, Chicago, September 30-October 1.

October

NORTH AMERICAN GASOLINE TAX CONFERENCE, Whitley Hotel, Montgomery, Ala., October 3-5.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Wichita, Kans., October 4.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., October 7-10.

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, fall convention, Hotel Severin, Indianapolis, Ind., October 9-10.

AUTOMOBILE MANUFACTURERS ASSOCIATION, Auto Show, New York, October 12.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual dinner, Hotel Commodore, New York, October 14.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, eleventh annual meeting, Dallas, Tex., October 16-18.

AMERICAN WELDING SOCIETY, annual meeting in conjunction with National Metal Exposition, Hotel Cleveland, Cleveland, Ohio, October 20-25.

PETROLEUM DIVISION, A.I.M.E., October 24, 25 and 26, Tulsa.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Shreveport, La., October 25.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, annual convention, celebrating Texas oil's forty-fifth birthday, Fort Worth, Tex., October 31-November 2.

SOCIETY OF AUTOMOTIVE ENGINEERS, national aircraft production meeting and engineering display, Hotel Biltmore, Los Angeles, Calif., October 31-November 2.

November

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Los Angeles, Calif., November 7-8.

AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.

ARKANSAS OIL DEALERS ASSOCIATION, Little Rock, Ark., November 14.

December

SEVENTEENTH EXPOSITION OF CHEMICAL INDUSTRIES, Grand Central Palace, New York, December 1-6.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, New Orleans, La., December 2-6.

1941

January

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting and engineering display, Book-Cadillac Hotel, Detroit, Mich., January 6-10.

February

IOWA INDEPENDENT OIL JOBBERS ASSOCIATION, Des Moines, Iowa, February 26-28.

AMERICAN PETROLEUM INSTITUTE, southwestern district regular spring meeting, Washington-Youree Hotel, Shreveport, La., February 27-28.

March

AMERICAN SOCIETY FOR TESTING MATERIALS, Hotel Mayflower, Washington, D. C., March 3-7.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention and refiners and suppliers' exhibit, Hotel Severin, Indianapolis, Ind., March 11-13.

April

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, twenty-sixth annual meeting, Rice Hotel, Houston, Tex., April 2, 3, and 4.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention and trade exhibit. Hotel Severin, Indianapolis, Ind., April 11-13.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 24-25.

In flowing wells on large leases efficient utilization of reservoir energy is sometimes accomplished by use of manifolds and time-cycle flow controllers at the central tank battery. At this installation in the E.M.A. field of North Texas all producers on one company's lease are flowed through this manifold, the time of flow of each well being regulated by the two controllers, one on each wing. Time of flow of each well is regulated according to its ability to produce at low gas-oil ratios

ENGINEERING & OPERATION

AUGUST 22, 1940

In This Section

RUNNING CASING ON SHALLOW WELL REQUIRES LITTLE EXTRA EQUIPMENT
By Harry F. Simons ..... Page 46
On deeper wells much special equipment is necessary which is not essential to running of the casing string on shallower wells. Many things, however, are common to both type wells, particularly danger of mishap which may result in a fishing job or injuring of a workman.

WILD PRODUCER ON GULF COAST KILLED THROUGH RELIEF WELL
By Neil Williams ..... Page 48
By means of a directionally drilled relief well Stanolind Oil & Gas Co. recently killed the discovery well of the Alta Loma field, Texas Gulf Coast. A description of how the well was brought under control and the relief well drilled is given.

ORGANIZATION FOR CONTROL OF PHYSICAL PROPERTIES
By E. L. Wormington ..... Page 52
In order that best control may be had of heavy investments in physical properties, the author points out advantages of a department whose functions are to control these properties, promote cooperation and apply corrective measures between field and office.

COMBUSTION SYSTEMS AND CONTROLS FOR GAS-FIRED BOILERS
By Henry Cooney ..... Page 61
Combustion systems of gas-fired boilers, generally, are divided into atmospheric and pressure classes, with the latter further subdivided into operation with air compressed, gas compressed, or the mixture compressed. Here, these types and their controls are discussed.

REFINERY GADGETS ..... Page 51

SAFETY: Shield Protects Workman While Filling Testing Bottle ..... Page 55

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SUGGESTED FIELD PRACTICES, No. 10—By T. P. Sanders ..... Page 58

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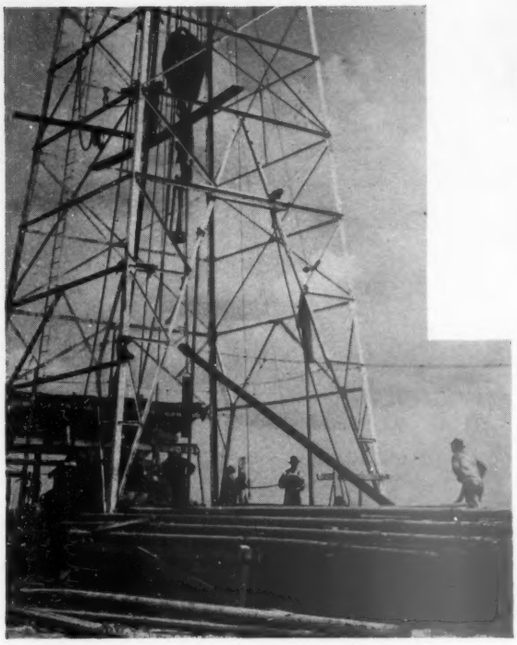
Running Casing Requires Little

By HARRY F. SIMONS

On shallow wells the only changes in equipment necessary for running casing are the installation of proper size elevators, tong heads, slips and landing of the stabbing board. Generally, two or three extra men are required.



The joint is raised by a pickup line while the wagon carries the lower end into the derrick

IN many cases running of the long string, or pay string, of casing in a rotary-drilled hole is the climax of the drilling operation as the rig is immediately torn down and the way cleared for the cable tools to finish the well. The operation requires a special organization of the drilling crew which is used once on each well and which grows more complicated with depth. Also on the deeper wells, much special equipment is necessary which is not essential to the running of pipe on shallower wells. However, many things are common to both shallow and deep wells, particularly the danger of mishap which will result in a fishing job or the injuring of a workman.

Generally, two or three extra men are used to supplement the regular drilling crew when running screw-type casing on a shallow well, in contrast to the five or six required on deep jobs. Two of the extra men run the head and tail wagons and third rolls the pipe from the rack to the walk. Actually, the head wagon is a short nipple of 3-in. pipe with a collar on each end which is used for a roller, the workman using a short piece of rope to tow the pipe into the derrick. The regular derrickman acts as the stabber and the remainder of the crew occupy positions similar to those assumed when running drill pipe in the hole.

Above: The derrick man gains control of the upper end of the joint by grasping the rope. Below: With the derrick man steadying the pipe, floor men stab it into the collar of the joint protruding through the rotary table and assume positions to start tightening the joint

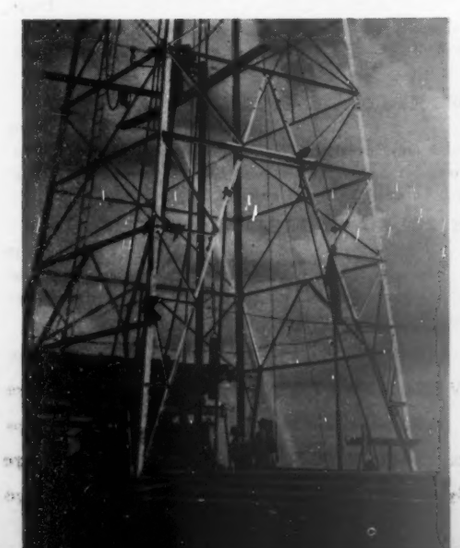
Danger of injury arises from several causes, the principal ones being the fact that the operation is only performed once during the drilling of each well, the haste with which the operation is performed due to the necessity of getting the pipe to the bottom as soon as possible to prevent its sticking or hanging because of the hole's caving, and the fact that three strange, and often inexperienced men must be fitted into the work. Failure of one of these men to perform his duties properly will result in a delay and possibly an injury to one of the regular crew. Most drillers start running the pipe in a leisurely manner until they find the crew can work smoothly and then they speed up the tempo.

In preparing to run casing, the hole is generally filled with clean, heavy mud, the weight being around 10.2 lb. per gallon and the viscosity from 40 to 44 seconds A.F.I. funnel with the funnel full and a quart out.

Equipment Changes Needed

There is one advantage when running in a shallow well which is not present in a deep well. The casing can be started in the hole almost as soon as the drill pipe has been laid down, as the casing is run through the rotary table the same as the drill pipe.

The only changes in equipment necessary are the installation of the proper size elevators, tong heads, slips, and the landing of the stabbing board. A new 1¼-in. rope is tied to the becket of the traveling block for a pickup line. On a deep hole, special elevators must be installed, rotary table removed and rotary sills blocked, and foundation laid in the rotary slot to support the special casing spider. In addition, the drilling line is often changed, or at least two more reeves are made through the blocks. In both cases, the joints of casing on the rack are counted and tallied, protectors removed and the threads lubricated. The counting of the joints eliminates the chance



After the joint is stabbed onto the string, it is spun by the cathead man off the cathead

To complete the tightening, the joint is tonged by the driller at the cathead

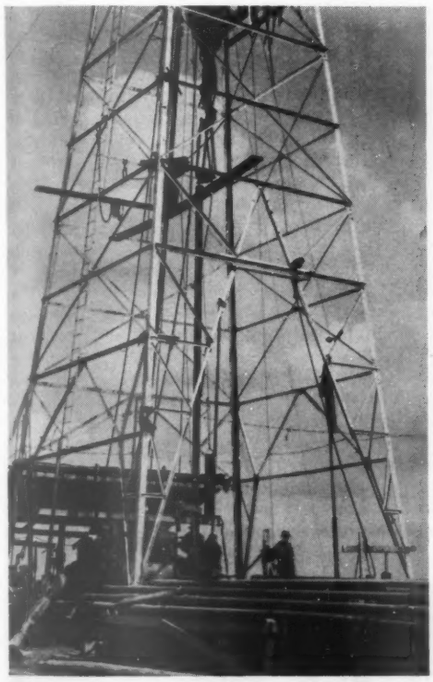
On Shallow Well Extra Equipment

of an attempt being made to get an extra joint of pipe in the hole with the result the pay formation will be sealed off or leaving a joint out with the result the pipe will be landed too high.

Due to the fact that latch-type elevators and rotary slips are used for running the casing in a shallow well, the endless spinning line is eliminated and an extra-long straight spinning line is substituted. An endless line would be more trouble than a straight line as the floormen would have to hold it with one hand while setting the slips with the other.

Preparation for Cementing

As practically all strings of casing run in a rotary-drilled hole are cemented, the first joint of pipe run is equipped with a shoe on the bottom and a float on the top, or a combination float and guide shoe on the bottom. This is installed and welded in place before the drill pipe is laid down

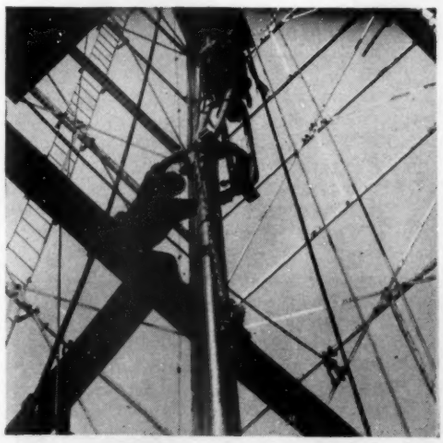


Elevators are lowered to be latched on the upper end of the joint while the pipe is being tonged

preparatory to running casing; at the same time the collars on the first five to eight joints to be run in the hole are welded and as each of these joints is added, it is welded. This prevents backing off in the hole in case it is to be finished with a rotary rig.

Present size of casing run is much smaller than formerly due to the economy of drilling a smaller hole and the saving in pipe cost. Now, 4½-in. and 5½-in. are popular sizes where the operator knows that no attempt will be made to deepen the well, although probably the most common size at the present time is 7-in. pipe. The accompanying photographs show a 2,656-ft. string of H-40, 8-thread, 20-lb. o.d. casing being run. The external diameter of the collar on this pipe is approximately 0.65 in. greater than the pipe diameter, so it is best run in an 8¾-in. hole, although a short string can be landed in an 8¼-in. hole.

This is the heaviest pipe run in wells of shallow depth and actually the drilling machinery is not called on to handle much, if any, more weight than when handling drill pipe. Finished 3½-in. drill pipe weighs from 8.5 to 15.3 lb. per ft. and finished 4½-in. drill pipe weighs from 12.750 to 16.6 lb. per ft. Casing weighs from 10 lb. per ft. to 20 lb. per ft. and most generally is around 17 lb. per ft. (The Drilling Equipment Directory, pp. C-2 and G-2.) In some cases the weight of the casing string is actually less than the drill pipe used to drill the hole. On deep wells, the reverse is true as the casing may weigh two or three times as much as the drill pipe.



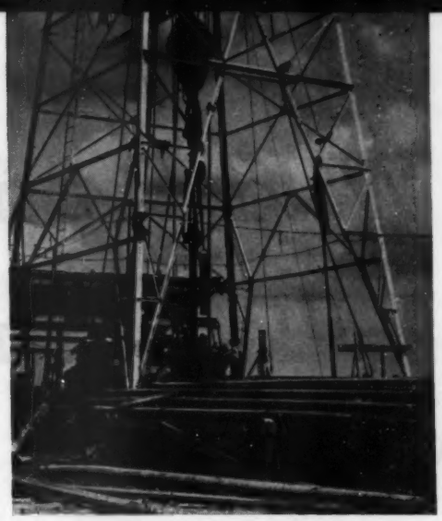
When the elevators reach the right height the derrick man latches them on the joint being run

While running the casing in a shallow well, care must be taken in handling the pipe as there is much greater danger of dropping it than on a deep well where a casing spider and slip-type elevators are used. The shoulder-type elevators used on a shallow well are suitable to the purpose if they are handled carefully, but a casing collar can be jumped if too much force is applied when lifting the casing from the slips or if the pipe hangs up in the hole and then breaks through. The same is true of setting the slips as they can bounce out of the rotary table and allow the pipe to drop.

Capacity of Drill-Pipe Slips

There is very little danger of the pipe falling due to failure of the slips or to overloading them. On Page N-6 of The Drilling Equipment Directory a chart giving the maximum capacity of drill-pipe slips show that the standard rotary slip having a contact surface of 10 in. will support a load in excess of 14,000 ft. of 16.60-lb. 4½-in. drill pipe. As the length of the slips are increased, the danger of bottle-necking the pipe is decreased.

While running the casing, the inside is filled



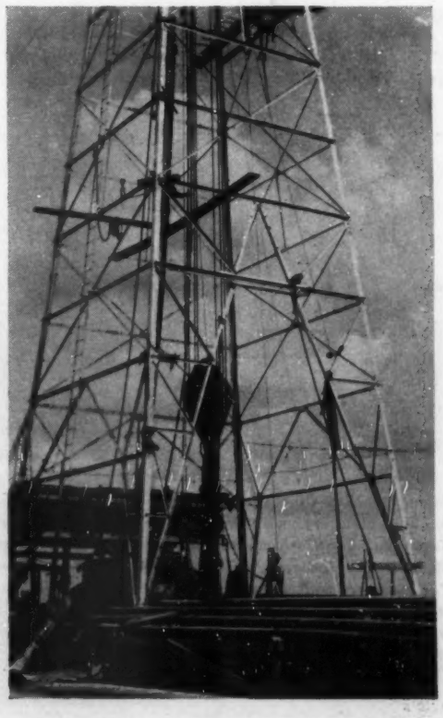
While the casing string is lowered into the hole the head wagon man grabs the pickup line

with mud after running 20 or 25 joints and filled on running each twentieth or twenty-fifth joint thereafter. This prevents failure of the float or failure of the casing due to external pressure and gives enough weight to force the casing through a tight place.

Some operators find bottom when the last joint is run in the hole, but others frown on this practice as being dangerous and run a wire line to determine whether the pipe is at the proper joint for cementing; many operators run the wire line for a check on the measurements.

If a casing seat has been made for the pipe, the tension may be let off immediately after cementing, but otherwise the weight of the casing is left suspended on the blocks until the cement has a chance to set. In a shallow well, this requires from 48 to 72 hours. The amount of tension to be released from the casing after the cement has set can be determined from a chart and formula on Page E-2 of the Drilling Equipment Directory. On short strings this is generally equivalent to the distance required to firmly insert the slips in the casing spider so this factor gives little concern to the production or drilling superintendent.

Slips have been set on the lowered casing string and the crew is ready to pick up another joint



Wild Producer on Gulf Coast Killed Through Relief Well

By NEIL WILLIAMS

OUT of control since May 23, following a blowout, Stanolind Oil & Gas Co.'s discovery well (No. 1 Hulen) of the Alta Loma field, Galveston County, was successfully killed August 2, 71 days after the blowout. Through a directionally drilled relief well, 600 sacks of cement were pumped into the bottom of the hole, completely shutting off the flow.

Preparations are now under way to go back into both the blowout discovery well and the directional relief well and attempt to complete both as producers. In the former it will be necessary to cut out and fish a string of stuck drill pipe, and run casing. The relief well will be plugged to a point of deflection below the surface casing around 2,440 ft., mill out through the 7-in. casing string, and redrill the hole vertically to the sand.

The discovery well blew out through the casing while coring at a total depth of 9,166 ft. In the hole at the time was a string of 13⅜-in. surface casing cemented at approximately 2,390 ft. Open hole had been carried from the bottom of this pipe, a total of 6,776 ft. of open hole, using 4½-in. drill pipe. Blowing out, the well made a considerable volume of fluid, estimated in excess of 900 to 1,000 bbl. per hour.

On this occasion after a couple of days of running out of control the well was killed by pumping mud into the hole, but in the operation the drill pipe stuck, making it necessary to go back in the hole and attempt to cut and pull the pipe to clean the hole. The hole was washed down over the pipe to approximately 4,200 ft. where a cut was made, but before the cut was pulled the well blew out again. This time the tool joint was pulled and rams on the blowout preventer closed, sealing the casing and holding the drill pipe, allowing the well to blow through the drill pipe over the top of the derrick.

To help in bringing the well under control, M. M. Kinley Co. was called in, and a 13⅜-in. gate was stabbed on the drill pipe on the 13⅜-in. preventer, and securely bolted and clamped down. This was accomplished without great difficulty. Below the gate on the gate assembly were outlets for flow-line connections, and with the closing of the gate production was directed to separators and field storage.

Producing through two ¾-in. chokes, one on each line, the well flowed at the beginning from 800 to 1,000 bbl. of fluid hourly. At first production was pipe-line oil but water soon began showing up, the volume steadily increasing. At the time the well was killed on August 2, it was flowing approximately 13,000 bbl. of fluid daily, of which 10,000 bbl. was water and 3,000 bbl. oil. Altogether, more than 300,000 bbl. of oil has been recovered.

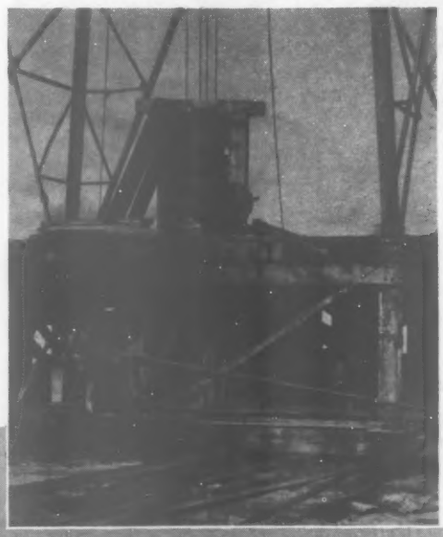
To handle the flow, two high and one low-pressure separators were set up, and a battery of stock tanks which at one time contained 34 tanks was provided. Toward the last it was possible to move out several of these tanks, leaving a battery of 30 tanks. A pipe line was laid to Pan American Refining Co.'s plant at Texas City, which is less than 12 miles from the field. Due to the fact it was not considered advisable to build up a pressure of more than 1,800 to 1,900 lb. on the surface casing, the only pipe in the hole, no attempt was made to close the well in. Such pressures would have been quickly built up because of the high pressure of the well, had closing of the gate been undertaken.

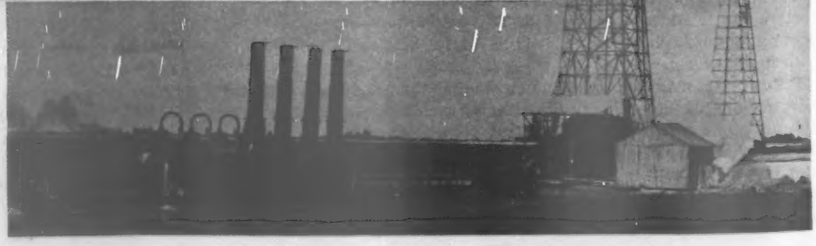
The only other alternative to kill the well was to drill a relief well (No. 3 Hulen). Location for this was made 570 ft. west of the first well, and drilling was started early in July. Vertical hole was drilled to approximately 2,440 ft., where the 13⅜-in. surface casing was cemented, this string being cemented to the top. From that point, the hole was deflected with a view of hitting the sand at a point near the bottom of the first hole.

In this there was an element of chance due to the fact that in drilling the first hole the last two single-shot surveys were missed, and as a result it was not known exactly where the bottom of the hole was located. However, at a drilled depth of 8,466 ft., 700 ft. off bottom of the first hole, the relief well drilled into the first hole, hitting the drill pipe. For protection a string of 7-in. casing then was run in the relief well, this being cemented at 8,259 ft.

Plans of the company then called for milling out or shooting the drill pipe in the first well with the view of pumping mud into the pipe. However, after failing to shoot off the pipe with a 50-qt. shot of liquid gylcerin, attempts to shoot or mill out the pipe were abandoned. Instead, a 6⅛-in. rock bit on a string of 2½-in. drill pipe was run in. Hitting the drill pipe in the first hole, this string followed the old hole down the outside of the 4½-in. drill pipe, using only pumping, to a depth near the bottom of the hole.

After a short time circulation was established and returns made through the 4½-in. drill pipe of the first hole. Then 600 sacks of cement were pumped into the bottom of the hole, after which the rams were closed and pressure built up, squeezing the cement, and killing the well.





Right: Stanolind Oil & Gas Co.'s relief well (No. 3 Hulen) drilled to kill its discovery well of the Alta Loma field, Galveston County, Texas Gulf Coast, which had been producing out of control since May 23. The discovery well is in the background. Above, right: The discovery well, showing gate which was stabbed on to control production following the blowout. Above: Battery of tanks provided to handle the large volume of oil produced by No. 1 Hulen while it was flowing out of control.

Refinery Gadgets

I-Beam Supports Traveling Block

An 8-in. I-beam, mounted on supports as shown in the picture supplies the track for the traveling block in a refinery where pipe is reconditioned. The I-beam is reinforced laterally by a 4-in. U-bar. The latter is tacked to the I-beam along its upper flange. Also, a method of support is shown which enables the I-beam to carry the load around corners.

Adapter Simplifies Drying of Gas Cylinders

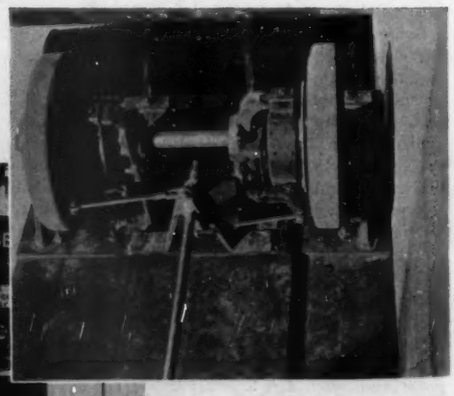
Anxious to remove every trace of moisture from the inside of liquefied petroleum gas cylinders before they are filled, a refinery has developed a simple adapter to permit heated air to be circulated through the cylinder. The adapter was made from a cylinder cap. A hole was burned through the top of the cap to permit a ⅜-in. pipe to extend through the cap and reach to the bottom of the cylinders when the cap has been screwed into position on top of the cylinder. The pipe is welded to the cap and the weld seals the top of the cap. A second hole was burned through the side of the cap and a ⅜-in. nipple was welded into the hole to furnish an outlet. Each of the pipes leading from the cap are fitted with the male half of a union; by this means the drum to be dried is connected with the heated air, for drying, and the exhaust line.

Power-Mower to Cut Weeds On Tank Farm

A Kansas refiner has been using an oil-powered weed-cutter to keep the area clean around each tank in the tank farm. At many plants, a horse-drawn mower or hand sickles or scythes are used. These latter methods are said to require many times the number of man-hours needed to accomplish the same work with the power-mower and the cost of keeping down the weeds is proportionately less. A picture of the machine used in the Kansas refinery is shown here and while it was not developed by the refinery personnel, its use in the tank farm is believed to be unique and original. It has adequate power to mount the sides of the earthen embankment and cut at any elevation.

Hand-Brake Enables One ManTo Handle Heavy Load

Four to six drums of oil or grease weighing up to 400 lb. each and placed on a truck for loading into a box car constitute too great a load for one man to handle down an incline from the blending or compounding plant to the car. A Mid-Continent refiner has provided an unusually safe, economical, and dependable braking system for a rubber-tired truck in this service. Two views of the truck are included and the mechanism may be traced from the handle mounted on the arm to the two brake drums on the rear axle. A relatively slight pressure on the handle tends to raise the rod which runs down to the shaft under the truck. As the rod is raised, it causes the shaft to revolve and this motion is transferred to pull the brake bands against the brake drums on the two rear wheels. This portion of the mechanism was salvaged from a discarded automobile truck and the cost of mounting the drums on the hand truck was relatively small. Another feature of the truck is the extended arm for pulling. Approximately 10 in. of pipe were welded into each side of the arm and the result is that a man pulling the truck can face in the direction he is pulling and although he is bending forward, the truck will not strike the back of his shoe. An insecure step in front of a heavy load could cause serious injury.



Organization for Control Of Physical Properties

By E. L. WORMINGTON*

Complete coordination between all departments in the proper recording of field activities is becoming more important if a company is to prosper over long-time periods. On an average about 75 per cent of the fixed assets of producing companies are represented by physical properties and development costs. In order that best control may be had of these huge investments the author points out the advantages of inaugurating a department whose functions are to control physical properties of the company, promote cooperation and apply corrective measures between field and office, and by education of the field personnel, assure better distribution practices in order to provide and maintain accurate accounting records.

FROM a technical and tangible point of view the oil industry has made rapid strides in recent years. Due to improvements in equipment and engineering practices, daily progress is taking place in the technique of producing oil. Comparatively small independent companies now maintain engineering and geological staffs and use other specialists to improve development and production methods. The physical aspects of oil production has absorbed the full interest of the executive department without regard to the part that should be played by the accounting department. The ultimate good health and financial gain of an oil company is dependent upon complete coordination between all departments for the proper recording of field activities.

Fixed assets of producing properties, on the average, are represented by about 25 per cent in leasehold costs and 75 per cent in physical properties and development costs. Lack of proper control of these huge investments and uncertain distribution of development charges into their proper channels has created a problem which stands out in comparison with other advancements as a major weak spot in the oil industry. The problem is one for executive consideration, as the proper control of the tangible and intangible costs affects all departments from the field to the administrative.

Equipment Investments

Variable conditions in the production of oil require that each lease and sometimes each well be operated to conform to its particular characteristics and, in order to facilitate oil recovery at a minimum of expense, this necessitates a change in the production principles to conform to the changing conditions of the lease or well. It is well known that the large investments in equipment are of a mobile character and this fact alone creates a difficult accounting problem. The wide enlistment of factors essential to the production of oil, entailing various clearing accounts, increases the complexity of the problem.

Some major companies have taken a step in the right direction by the establishment of a material department. However, this division does not always work in harmony with the accounting staff as its interests are biased to the narrow responsibilities placed upon it. Its duties are usually confined to the physical aspects of material movement and control for the particular aid of the production department, without due regard to the difficulties that the accounting department has in properly transposing the actions of the whole organization into the proper accounts in order to reflect a true picture of operations to the management.

Due to the departmentalized policy, this problem is individually evaded from the broader standpoint and, with few exceptions, is not properly controlled by any one party capable of concentrating his full time on the general aspects.

There is a wide difference between the interest and attitude of the field personnel and the accounting personnel. The primary concern of the field men is to produce the oil and, as stated before, this requires the employment of numerous operations. The accounting department represents a scientific system of recording these activities, but it is dependent upon proper cooperation and information from the rest of the organization. The time will probably come when all companies, both independent and major, will recognize the need of an interpreter to perfect closer harmony and cooperation between the two forces.

In short, the accounting department does not fulfill its duties unless it effectively aids the management in the proper administration and control of the business through reliable statistics. The accounting division of an oil company should be recognized as having a definite value to the administrative department when operating costs are truly reflected through a classified distribution of expense and investment control.

Determining Depreciation Expense

The determination of depreciation expense is governed by the information on record as to the physical location of equipment by individual leases or properties. The failure to record physical movement of equipment from one lease to another or from one service unit to another, will result in incorrect depreciation charges and could result in insufficient depletion allowances for income-tax purposes. This possibility exists because depreciation is taken into consideration in determining the net income from the property in computing the 50 per cent limitation.

To facilitate coordination between the field and office, the inauguration of a department or subdepartment to assume the following duties would be a major factor in economic advancement. The functions of this department would be to control physical properties of the company, promote cooperation and apply corrective measures between field and office, and by education of the field personnel, assure better distribution practices in order to provide and maintain accurate accounting records. Also to supervise centralized control of surplus equipment and economic disposal for exchange between various properties.

Qualifications of the man supervising this department should include a well-rounded knowledge of equipment as well as a general knowledge of operating practices, a knowledge of accounting involving material and distribution of items to capital or expense. He should realize that his department is maintained to furnish information to other departments with the thought in mind to increase efficiency and harmony throughout the organization.

Relation to Distribution

To elaborate upon the duties of the "material control department" it will be better to dwell upon its relation to each branch of the organization.

First: We will presume that a reconciliation has been made of the property accounts, based on a physical inventory, and that all records are regarded as accurate. All material transfers will first come to this department for distribution charges and pricing. This point is important because the job of distribution clerk is often delegated to a minor employe on the accounting staff who has no conception of equipment or field practices. This is one phase of control which is dependent upon sound judgment and the interpretation of distribution policies. After the transfer leaves his hands misdirection of entries onto the books usually can be attributed to mechanical errors and be caught through a balance of the books. Therefore the distribution of charges is dependent upon the human factors of interpretation, conscientious reasoning and field experience.

The man who is able to correlate in his mind a picture, as reflected by information on the transfer as to the movement or reason for the transfer, is capable of accurately directing the charges into their proper accounting channels. Proper distinction between investment and expense charges in oil accounting is conceded to be a finely drawn line and, if not closely interpreted, it may eventually create a false reflection of profits.

Second: In relation to the purchasing department, the material control department may effectively aid in holding down purchases of new equipment by maintaining and keeping an up-to-date record of all surplus equipment in the organization, so that all requisitions from the field may be checked against the surplus equipment records before being placed in the hands of the purchasing department for purchase of new material. It is also the duty of the material control department to become familiar with transportation facilities and problems in conjunction with the exchange and transportation of equipment from one point to another.

Third: Usually the engineering department is rather casual in making estimates of new con-

*Petroleum Inventory and Accounting Service, Tulsa.

struction and, without properly figuring actual costs and other factors such as transportation, labor, insurance, etc., produce estimates for new construction for the approval of the management which turns out later, after completion of the project, to be much less than the actual cost. With the cost figures and other data maintained in the material control department an "authority for expenditure" could be very closely estimated and, at the same time, use of any surplus equipment may be utilized in the new project and a distinction made between cash outlay required and company-owned equipment to be used.

Fourth: It has been pointed out that the responsibilities of this department call for a varied knowledge of field conditions as well as accounting and office procedures. In addition to the other duties mentioned, this department will be particularly important to the good management of the organization in being capable of protecting the interests of the company in regard to its joint interests. In case of smaller companies partnership interests could be handled by this department. In larger organizations it would be a direct aid to the partnership section in checking prices and billings by the operator for overcharges and to see that the outside interests are economically operated. With all the data kept up by the material control department and with its close relation to the accounting department and other departments the management may request special statistics on operating costs, information on which to govern depreciation policies, investment figures, etc.

Trend Toward Unitization

Economic and competitive conditions in the oil industry have created a popular trend toward joint interests and unitization of properties. Practically all companies these days are either operators of properties involving outside interests or they have interests in properties operated by others. In either case, it is particularly essential, and is either written in the operating agreement or implied, that reliable and accurate accounts be recorded of all activities. In the case of the operator it is essential for him to maintain reliable property accounts as a protective measure and to substantiate the reasons for movement which otherwise might be entered as a claim for adjustment by the nonoperator.

In case of the companies' interests operated by others, it is necessary for them to maintain accounts and to thoroughly check the billings made by the operator for possible overcharges and lack of credits of both a tangible and intangible nature.

Many executives of independent companies, not being educated in the principles of accountancy nor having any primary interest in accounting, do not recognize the many possibilities and the vast amount of information which can be afforded them to efficiently control and guide them in the management of their organization. Unless the head of an accounting department is aggressive and voluntarily inaugurates modern accounting principles for submission of important data, these advantages are seldom realized.

Smaller companies may feel that they are not dependent upon the accounting department because of personal supervision, but in anticipation of future expansion, they should realize that it takes time to formulate systematic accounting procedures and the education of its personnel. The inauguration of an efficient recording system is made more easily and causes less friction when the company is comparatively less active. One company gradually demanded and required more and more information on the field reports for a period of several months before making actual use of this information. This was an educational move done preparatory to making a major change in accounting practices.

Just as the oil companies eventually realized the necessity of concentrating new purchases in the hands of a capable purchasing department, so eventually will the companies realize that, due to the complex conditions under which they must operate in relation to their huge investments, it will be necessary to inaugurate and establish a department as outlined above. Under the supervision of a man with the proper qualifications and who is able to concentrate his full time on the general aspects of operative control, which collectively are important but are too detailed to be given the proper consideration by the administrative body.

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SAFETY — Shield Protects Workman While Filling Testing Bottle

TEN of the 34 fatal accidents reported in the production and natural-gasoline departments of the oil industry during 1939 were the direct result of fires and explosions. As the report covers approximately 60 per cent of the men employed in the industry, this means that 16 fatalities in these departments were probably the toll for the year. In addition there were many accidents in which the workmen sustained lesser injuries. Many of these accidents could have been prevented if proper safe guards had been installed or proper precautions taken.

Explosions are particularly bad as any workman close by is generally rendered partially or wholly unconscious and is unable to escape the ensuing fire or to remove himself from danger. Use of explosionproof switches, precautions against anything that will ignite the explosive mixture, care to use sufficiently heavy connections so that an adequate margin of safety exists while handling high pressures, and careful and cautious operation of the machinery and valves on the part of the men, are all useful in reducing the number of accidents due to explosions.

The illustration shows a unique safety device installed by one operator of a high-pressure well in the Gulf Coast area. It is a shield made from boiler plate and angle irons which encloses a testing bottle. Pressure on the line and on the testing bottle when it is being used, is approximately 3,000 lb. per sq. in. In case of failure in the testing bottle while it has this extreme pressure on it, pieces of steel would be thrown in all directions and any nearby workman would almost certainly be injured if no guard were present for lessening the effects of the explosion.

The workman operating the testing bottle can stand behind the boiler plate and operate the necessary valves. In case it breaks, he has a good chance of escaping serious injury as much of the force of the flying fragments will be removed by the shield.

The fact that the shield is present does not give the workman operating the testing bottle any license to get careless with the high pressure. Careful opening of the valves, so that the pressure change takes place over as long a time as possible to allow the connections and the vessel to adjust itself to the high pressure, will materially reduce the chances of an explosion.

HOW GRAVEL PACKING INCREASES WELL PRODUCTION

GRAVEL PACKING of an oil well consists of interposing gravel or other granular material between a producing sand and the screen or perforated liner of an oil string.

The advantages of gravel packing as commercially developed are:

1. An increase of the producing life of a well.

2. The oil sand is maintained in position so that none of it sloughs into the well bore.

3. The elimination of sand sloughing prevents the sand cutting of screens, tubing, pumps, etc., and this greatly extends the useful life of the equipment.

4. Well production is increased and maintained and there is a substantial reduction in lost time otherwise caused by frequent clean-out jobs to keep the wells at peak condition.

Licenses for Gravel Packing under United States Patents Nos. 1,530,221; 1,975,162; 2,014,770; 2,096,904; 2,154,461; 2,167,190; 2,167,191; 2,173,119 are available from:—

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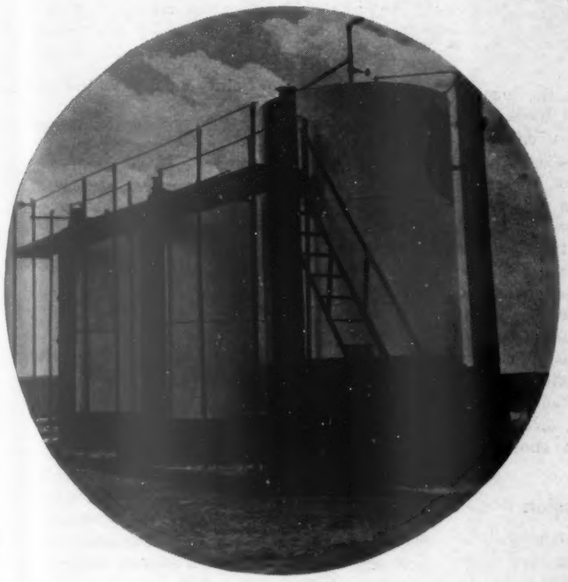
Operating Ideas

Stairway For Welded Tanks

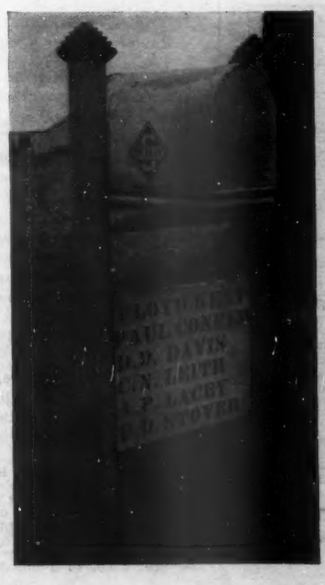
One of the principal disadvantages of welded tanks is their lack of a stairway when they are assembled into a battery on a lease. To make this problem more difficult there is no way of bolting a stairway on the tanks unless cleats or angles are welded onto the tank walls. One Kansas operator who favors welded-steel tanks uses old pipe for making a stairway and walkway. A set of



uprights consisting of a pair of 2-in. pipes is placed at each tank battery; the lower ends are firmly imbedded in the soil. Cross members at the proper height support the walkway and old sucker rods are laid on top of the uprights for a hand rail. The stairway is made from pipe and tank steel with the bottom set in concrete.

Support For Mail Box

This attractive support for a mail box was found on a Kansas lease. It is made from old 4-in. pipe for uprights with 2-in. cross members. Sheet steel is used for the roster plate. The uprights are topped with cones from an old 2-cone rock bit. Platform for the box is 2-in. pipe, welded to the cross arm, the box being fastened to a piece of sheet steel.



Bull Wheels Mounted on Pipe Skids

Cable-tool rigs are being modernized with practically all units mounted on skids. This reduces the rigging-up time substantially as it is only necessary to slide the various units into place and turnbuckle them down. The bull wheels in the accompanying photograph are mounted on skids made from 6⅝-in. drill pipe and 10-in. channel irons. The bull wheels can be lined up with the band wheel in only a few moments and they can be moved from location to location much easier.

Electrically Operated Brake on Shooter's Reel

A reel with electrically operated brake for use when lowering nitroglycerin shells into wells for shooting has been in use successfully for several months. The reel is braked by a motor generator when it is lowered into the well. Power is also supplied for the reeling of the line out of the hole after the shell is deposited. The engine of the truck is operated only when the line is being reeled in. A hand brake on the reel is shown at the left and the control box at the right provides more delicate braking. The handle at the extreme left, near the sill of the truck, controls the flow of gasoline to the engine of the auto. The whole device is contained in a sturdily built steel chest. The device is legally protected.

Suggested FIELD PRACTICES . . No. 10

Tension on Casing Should Be Adjusted When Long Strings Are Run

By T. P. SANDERS

WHEN a long string of casing is run into a deep well, the factor of safety for the top joint in tension is often less than 2. While cement slurry is being placed, the entire weight of the string is supported from the surface, except for that part which is supported by the buoying effect of the fluid in the hole. Under tension the casing stretches, and this elongation is increased by high earth temperatures and by the heat of reaction between water and cement.

After the cement sets, the top joint of casing continues to carry a load equal to the entire submerged weight of the string. If for any reason a reduction in temperature takes place, either inside or outside of the casing, the resulting contraction of the pipe may cause casing failure.

Reduction of temperature inside of the pipe commonly takes place shortly after the cement sets. Comparatively cold mud may be pumped into the hole. In one case, this factor alone was sufficient to part the casing before rotation of the drill pipe was started. In other cases a whipping drill stem and severe casing tension apparently combined to induce casing failure. Still other failures have occurred after wells have been placed on production. It is believed that such failures are brought about by the near-freezing temperatures produced by formation gas as it expands upward toward the surface.

The remedy for tension failures of casing is simple in most cases, but dangerous in others. Companies that have concerned themselves with the problem have let off tension at the tops of their casing strings after the cement has set. In some cases the lower portion of the uncemented section has been placed in compression. If the string is closely supported throughout its length by the walls of the hole, no trouble will result from placing it in compression. However, if bad caving has been encountered, or if the hole has been greatly enlarged due to salt beds or other soluble materials, care must be used in letting off the tension. Most casing will not support much more than 200 ft. of itself as a column without bending. In most localities it is safe to assume that no cavities 200 ft. in height will exist in the hole, but where drilling has been complicated by severe caving, loss of circulation, or leaching of salt formations, this assumption should be avoided.

Calculating Amount of Tension

When a long string of casing is cemented, it is advisable to calculate the amount of tension to be let off after the cement has set. This value is found as follows:

Example.—Assume that a string of casing 8,000 ft. long is run into a well full of rotary mud and is cemented so that the column of slurry covers the lower 3,000 ft. of the string, leaving 5,000 ft. uncemented. From the accompanying chart we find that the 8,000-ft. string stretched approximately 36 in. due to its own weight. After the cement has set, we wish to let off just enough of the tension so that the base of the uncemented section will neither be in tension nor compression. In other words, the 5,000-ft. section should be allowed the same stretch which would be normal for a suspended uncemented string of its same length.

At first sight it may appear that the easiest way to determine the proper amount of stretch to let off would be to subtract the normal stretch of the uncemented portion from the normal stretch of the entire length of the string. Actually this gives an erroneous result, as it does not take into account the fact that the stretch in the cemented portion cannot be let off.

Distance Top Joint Is Lowered

The distance the top joint should be lowered after the cement sets is given by the following formula:

$$D = S - (S_1 + S_2)$$

where

D = distance top joint should be lowered in inches.
S = normal stretch in inches for total length of string when suspended from surface.
S_1 = normal stretch for a suspended string equal in length to the uncemented portion.
S_2 = normal stretch for a suspended string equal in length to the cemented portion.

The normal stretch of the 5,000-ft. uncemented portion when suspended in rotary mud is found from the above chart to be approximately 14 in. The normal stretch of the 3,000-ft. cemented portion is found to be 5 in. under similar conditions. Applying the formula:

$$D = 36 \text{ in.} - (14 \text{ in.} + 5 \text{ in.}) = 17 \text{ in.}$$

Thus, theoretically, the top joint should be lowered 17 in. after the cement has set, and this distance may be measured at the well head with any convenient rule. In practice it is usually considered unwise to lower the top joint more than 80 or 90 per cent of this distance, since the presence of a reasonable amount of tension in the string safeguards against possible compression kinks.

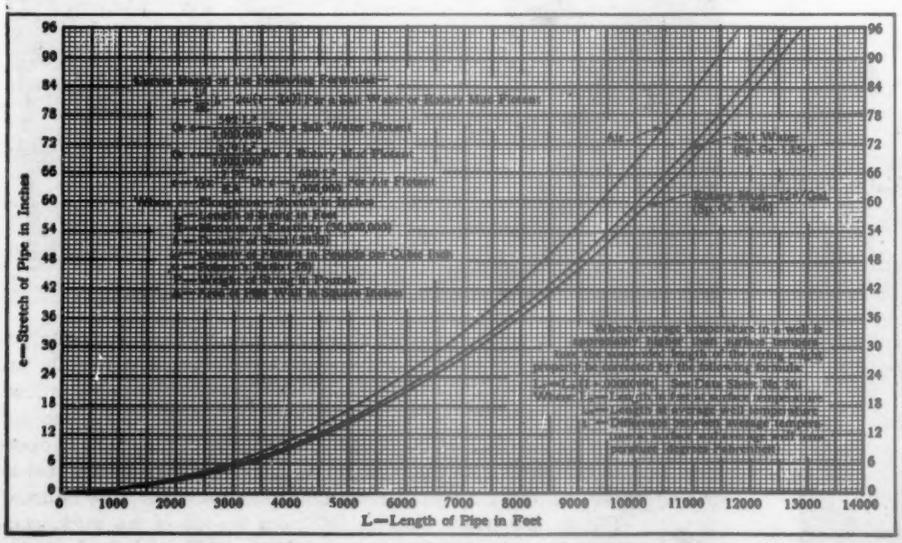


Chart showing stretch of casing, tubing, or drill pipe when suspended freely in various fluids without float plug. (Courtesy of Spang Chalfant, Inc.)

BOOKS

*COVENANTS IMPLIED IN OIL AND GAS LEASES. By Maurice H. Merrill. 2d ed., 1940. 517 pp. Price $10.**

The second edition of Merrill's "Covenants Implied in Oil and Gas Leases," is a complete revision of the first edition which appeared in 1926. The various covenants implied in lease forms are classified according to the state of development of the lease, or of surrounding leases, and the presence or absence of clauses dealing with these covenants.

The author presents over 800 decisions covering the various covenants and shows how these decisions have evolved with development of the oil industry. In many cases, decisions are discussed and questions raised as to their validity, while the author at all times attempts to present a reasonable and legally correct answer to the many problems arising from the operation of oil and gas leases.

The book is, therefore, a valuable reference not only for oil attorneys but also for lessors and lessees who may be in doubt as to their rights and privileges under the leases or contracts which they have signed.

*"Covenants Implied in Oil and Gas Leases" may be purchased through the Book Department of The Oil and Gas Journal at the established retail price of $10, postage prepaid (extra outside the United States), and a copy will be forwarded promptly upon receipt of check or money order for that sum. Where payment or company purchase order is not provided, the book will be sent c.o.d. to avoid delay.

Combustion Systems, Controls For Gas-Fired Boilers

By HENRY COONEY

NATURAL GAS offers many advantages as a fuel, and, as the ever-growing network of pipe lines spread, there have been rapid increases in the number of gas-fired boilers. This fact led to increased research and development work on the part of certain federal bureaus, the gas associations, and the manufacturers of boiler equipment, so that combustion systems and combustion controls for all types and sizes of steam generators are now available.

Combustion Systems

The American Gas Association, prominent among the investigators in this field, classifies the combustion systems as follows:

1. Atmospheric.
2. Pressure.
   - (*a*) Air compressed.
     1. Without automatic proportioning.
     2. With automatic proportioning.
   - (*b*) Gas compressed.
     1. Without automatic proportioning.
     2. With automatic proportioning.
   - (*c*) Mixture compressed.
     1. Without automatic proportioning.
     2. With automatic proportioning.

The following brief descriptions of these systems are given with the view of showing their adaptability to automatic combustion control. (For complete descriptions see "Combustion," a publication of that association.)

Atmospheric System

The term "atmospheric" as here applied to combustion processes signifies, first, that natural draft is employed, and, second, that the burner is designed to operate with normal service line pressure, 2 to 4 oz., on the fuel header. Since burners of this class operate under such reduced pressures the air entrainment is low and secondary air is required for complete combustion of the gas. This difficulty may be remedied by the use of special injection devices, and by designing the burner for many small gas streams.

The problem of applying controls to atmospheric burners is complicated by the fact that the air for combustion is supplied through different channels and by different impulses. The primary air enters through the burner and is entrained by the gas. The secondary air is admitted through the furnace doors or special slots in the burner or its connections and is induced by the draft. So in order to secure acceptable results additional control devices must be provided for the secondary air.

The use of secondary air, although a necessity in space heating, makes for inefficiency, for it must be present in considerable excess, since it has but a limited time in which to combine with the burning gases and the only point of contact is at the edge of the flame.

Pressure Systems

The pressure systems are designed to operate with sufficient pressure on the burner header to permit of throttling control. This pressure may vary from 10 oz. for burners of the mulitple jet or sectional types to several pounds for those of the argand or "blast" types.

Systems A, B and C-1 are seldom used for power boilers as they do not automatically proportion the fuel and air. They are intended for constant-heat operations and for "blast" work. Familiar small applications of these burners are met with in blow torches and soldering furnaces. Since two valves are used, one to regulate the gas, the other the air, they are known as two-valve systems. They are manually operated.

Systems A-2 and B-2 are known as "one valve" systems; for the burner and its connections are so arranged that the manipulation of a single valve delivers an air-gas mixture of the desired proportion to the furnace. Secondary air is not used, hence the problem of applying controls to burners of this type is much simplified.

System A-2 employs the momentum of a stream of air passing through a venturi-shaped tube to inspirate the gas, which has been reduced to atmospheric pressure, into this tube. It has been demonstrated that such tubes may be so designed that the amount of gas discharged from it holds a definite ratio to the air used, hence the air-gas ratio may be adjusted as desired.

The chief advantage of this system is that gas at reduced pressures may be used for any type of heating work including exacting high-temperature operations. A disadvantage is the expense of compressing the air, which may be offset in part in plants which compress the gas. However, when air becomes an item of expense the tendency is to use less of it.

B-2, the high-pressure system, is the one generally used where gas is obtainable at pressures above 2 lb. This system utilized the energy of a stream of gas passing through inspirators analogous to those employed in System A-2 to entrain the air in correct air-gas ratios. This ratio depends on the size of the orifice admitting gas to the device. It is a "one valve" system which carries the compressed gas to the furnace without the use of screens, fire checks and the like.

C-2 mixture compressed with automatic proportioning. Although the mixture discharged from a burner may be properly proportioned, still it may not be homogeneous. To overcome this difficulty various schemes have been devised, as the use of fans, blowers, and mixing compressors to premix the air and gas and discharge them to the furnace. Among its disadvantages are the expense of preparing the mixture, and the hazard of operating with an explosive mixture in the piping from the mixing apparatus to the burner. However, in some of the improved types of this system, these objections have been overcome in part.

Systems of this class may be applied to any type of heating work including "on and off" operations. Since the fuel-air mixture is prepared before it is discharged to the boiler, partial controls may be applied with good results.

It should be noted that only the pressure systems which automatically proportion the air and gas are regularly used in power boilers. System A-2 is employed where gas is available only at reduced pressures; B-2, where gas is obtainable at above 2 lb., and C-2 in either case. There are many installations in which Systems A-2 and C-2 may be applied with good results, but due to the fact the burners used in the high-pressure and atmospheric systems are self-contained units which are easily applied, they have become the popular burners and are the ones considered in the following comments.

Gas Burners

There are many makes of burners on the market, including the venturi-throat, fan-mix, center-fired, ring and multiport types, any of which will give satisfactory service if properly applied. If a burner will produce a flame with a well-defined blue inner cone (without a grid), it may be considered as functioning properly, i.e., burning the gas completely although not necessarily economically. The thermal conductivity test affords a means of determining whether or not a burner is admitting the correct volume of air. In making this test (as a shop test) the burner discharges into a plenum of constant pressure and only the gas valve is manipulated. Accordingly, in practice a burner will deliver an air-gas mixture of the desired proportions over its designed range, provided the furnace pressure is held constant. Such tests are, of course, intended to indicate burner performance only.

As a check on the efficiency of a burner in

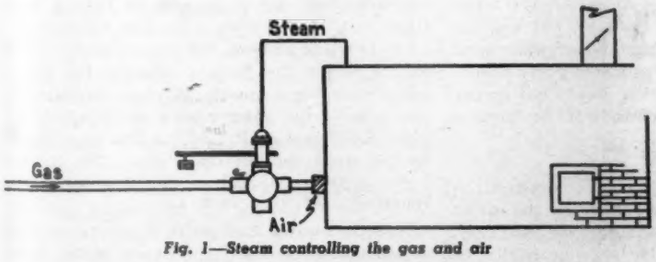


Fig. 1—Steam controlling the gas and air

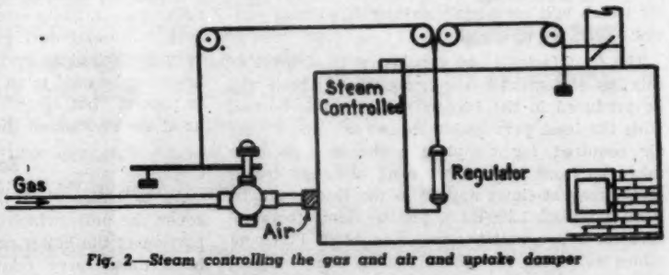


Fig. 2—Steam controlling the gas and air and uptake damper

operation, the percentage of CO_2 in the flue gas serves as a reliable guide. If the CO_2 in these gases cannot be held quite close to one figure below the theoretical value, an "economy" search should be set on foot at once, beginning with the burners and following on through to the stack. However, when the proper type of burner is installed in a furnace which will permit it to operate as designed, the problem of securing a good air-gas mixture and of controlling the combustion process are both much simplified.

Boiler Furnaces

Boiler furnaces are usually set up in two classes, namely, the "integral" and the "refractory" types. The "integral" types, which are met with in oil field and other internally fired boilers are generally operated as received. They stand up well under the most adverse firing conditions, doubtless because their furnaces are well "water screened." The "refractory" furnaces are erected at the plant, and may be designed by the plant staff to accommodate the fuel and the operating conditions.

Before attempting a brief discussion of the task of designing a furnace for natural gas, one characteristic feature of this fuel should be considered. Natural gas contains practically no ash to attack the furnace lining, so the main source of trouble with gas firing comes from the expansion and contraction of the walls, not from high temperatures which melt down the refractories, assuming, of course, that high-grade materials are used. By employing the sectional type of wall construction and avoiding large combustion spaces this expansion and contraction trouble may be greatly reduced and the gas burned with the least air which will completely oxidize it without serious refractory upkeep.

The first factor to be considered in support of this last statement is the temperature which will be produced in the furnace when gas is burned with the least permissible excess air. The excess air required for complete combustion is here taken as from 8 to 10 per cent, although traces of CO may at times appear in the flue products. With a typical 1,200-B.t.u. gas the flame temperature for 9 per cent excess air is 3,460° F. (from tables corrected for dissociation). The resulting furnace temperature will depend on the following and other factors:

1. *Heat lost by radiation from furnace walls.*—A loss of from 100° to 200° F. in furnace temperature may come from this source in the best insulated units. However, every means should be used to lessen this loss, regardless of its effect on furnace temperature.

2. *Boiler rating.*—If a boiler could be operated at or near normal rating there would be but little refractory trouble. Unfortunately in practice such conditions rarely exist, so provisions must be made for high ratings. In the long run it may be cheaper to build a furnace designed for 2,700° to 2,800° F., temperatures rarely exceeded in practice, than to put up a cheaper one, and then use a control which increases the excess air at high loading, when steam is most needed, or one which carries 18 to 20 per cent over the load range.

3. *Heat absorbed by the boiler.*— Every means should be employed to facilitate the absorption of heat by the boiler. The baffling should be so arranged that there is a "water screen" of tubes or of tubes and shell directly over the fires. The burners should be placed as close to the heating surface as practical. Not so close, however, that the flame will be cooled below the ignition temperature, nor the flow of the gases be restricted so as to cause them to "bank" and the flame to "float."

Where the boiler is set high this arrangement of the burners will permit lessening the depth of the furnace and installing a "grate" or false floor, thus reducing the area of the side walls exposed to the direct heat of the flame, and providing the base for a refractory bed which facilitates the ignition of the air-gas mixture as it enters the furnace.

If by following the above and other needful suggestions, the heat absorbed by the boiler can be brought up to 70-75 per cent, and the first pass does its share of the work, the furnace temperature at highest loadings should not exceed 2,800° F., a temperature which the refractories in a properly designed solid-wall furnace will withstand without excessive deterioration.

The furnace temperature may be further reduced in certain installations by the use of air or water-cooled walls, which conserve heat while insulating the furnace and reducing its temperature. Air-cooled walls are at their best with forced draft, for with natural draft it is difficult to move the combustion air through the setting without creating abnormally high velocities through the boiler passes. Fully screened furnaces are at their best at normal or higher loadings, but may be very inefficient at low ratings. Water walls may, however, be used to an advantage in many boilers to protect "hot spots" (which should not occur) as at the rear or on the sidewalls of the furnace.

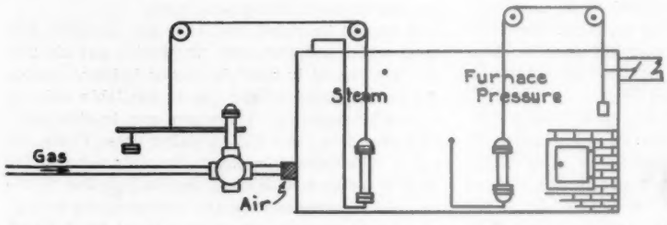


Fig. 3—Forced-draft layout. The steam controls the inlet damper and the fuel and the furnace pressure controls the outlet damper

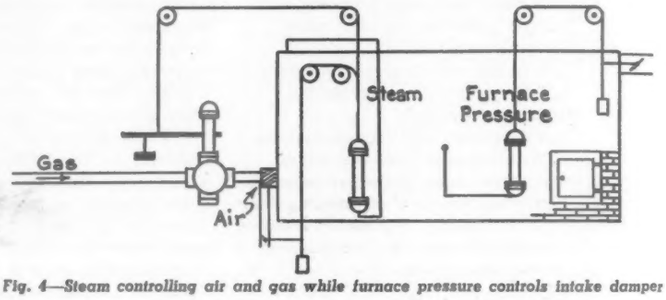


Fig. 4—Steam controlling air and gas while furnace pressure controls intake damper

Boilers

As to boiler sizes this article is designed to cover the units which today make up the major portion of the boiler sales—those under 400 b.hp. Such units carry relatively large quantities of water and are easier to control than larger ones which may carry only enough water for a 2 to 3-minute run. All types of boiler are included which carry above 75 lb. pressure, regardless of the use to which the steam is put.

Controls and Their Functions

The functions of a complete mechanical control are as follows:

1. To maintain a constant steam pressure at all ratings.

2. To maintain a constant air-gas ratio under all loads and operating conditions. However, certain types of controls carry high excess air at high rating to protect the refractories and at low ratings to insure complete combustion.

3. To maintain a nearly constant water level at all loadings and to protect the boiler in the event of low water.

4. To provide load regulation.

5. To protect the boiler in the event of the failure of some of its component parts, or of the boiler itself.

Function 3, although often incorporated in the control system, may be operated independently as from the level in the shell or the water column, and will not be further considered here. It should be borne in mind, however, that this is an important function, for when the water flow closely parallels the steam flow the problem of maintaining a constant steam pressure is much simplified, and that a steady "low" water level plays an important part in keeping wet steam out of the mains and in taking work off the superheaters.

Controls—Manually Operated

We will begin with manual controls and then follow through with a few of the different types of automatic controls.

The operating equipment usually provided for the simplest form of manual control (which must perform all of the above functions and others) consists of gages on the steam and gas lines, a gas valve, a burner shutter and a damper which may or may not be calibrated. To operate this system the fireman watches the steam gage constantly and when the pressure changes makes whatever adjustments of the equipment he deems necessary to bring it back to normal. At the end of his shift he reads the meter and concludes it was a good or a poor run for the load which, of course, he must estimate. The results secured by this method are, as a rule, as good as could be expected when the only firing guide is the flame characteristics. (It is possible to have a bluer flame with 30 than with 10 per cent excess air.)

In operating with an improved form of manual control, when the fireman changes the gas to compensate for a change in steam pressure, he also adjusts the damper to a point which will give the desired draft for that load as indicated by the chart and the draft gage. The chart is made up from CO_2 analyses for ideal combustion conditions.

A steam flow-air flow meter may take the place of the operating chart. The hands of this boiler meter are so arranged that when their records coincide the percentage of excess air for which the meter is set is holding. The boiler meter has the advantages of showing the steam flow from the boiler and of smoothing out the gradients of the chart. It is set for a given gas by Orsat determination, and should there be any marked change in the composition of the fuel it should be reset.

A CO_2 recorder may be used in place of the boiler meter. With this instrument as a guide some discretion may be used as to the percentage of excess air carried at high or low ratings, or the CO_2 may be carried at any given point over the load range. When operating with a recorder, care should be taken to keep the fires on the oxygen side of the combustion equilibrium. Hence a CO or an O_2 recorder may be used to an advan-

tage in connection with it. However, if the CO_2 is held close to the ultimate value the combustion cannot be far from ideal.

The efficiency of manual controls depends on the skill and attention of the fireman and the extent to which suitable instruments are provided for checking and guiding the operation. Control of the types shown will give satisfactory results with fairly constant loads, but where the load is variable, mechanical controls will give better results, as they are more sensitive to small changes.

Steam-Pressure Regulators

The function of a boiler is to make steam, and the steam pressure or flow serves as the initial control impulse in all automatic systems. It may be the only actuating impulse employed. (Figs. 1 and 2.)

The office of the steam-pressure regulator is to maintain a definite relation between the fuel flow, or the fuel and air flows, and the steam flow. In the first instance some form of air flow-gas flow apparatus is used to maintain the desired air-gas ratio. In the second instance a burner which automatically proportions the fuel and air is employed. (Fig. 1.)

Boiler governors are, of course, all actuated by the steam, but the power carrying out its impulse may be supplied from an outside source, as fluids under pressure, mechanical or electric drives or devices. When a boiler governor serves more than one unit of a battery of a boiler, it is called a master controller or regulator, etc.

Furnace-Pressure Regulators

The office of the furnace pressure regulator is to reestablish the furnace draft after a change in either the air or gas supply. Where the inlet and outlet damper both are to be operated, as in forced draft, and in self-contained controls where the breeching or other auxiliary dampers are used, this regulator becomes a necessity.

The steam and furnace pressure regulators are fundamental parts of all complete controls, and the systems now in general use differ primarily in the manner in which the control equipment is applied to these regulators.

Supplementary Control Factors

All control factors of this class are actuated either directly or indirectly by impulses produced by changes in the temperature, composition or volume of the flue gas, and by pressure or flow changes in the gas and air taken at the burner or the gas header. They include thermostatic device, combustion recorders, and various combinations of metering apparatus, for comparing true or relative volumes of steam, air, gas, or flue gas, as steam flow-air flow or air flow-gas flow meters.

The advantages claimed for controls using one or more of these factors may be summed up as follows: First, they give closer regulation of the air-gas ratio as they actually meter these gases by orifices or other differential methods; second, they serve as checks on operating conditions by supplying records of the pounds of steam produced, composition of the flue products, intensity of the draft, etc., by appliances built into the control; third, they make it feasible to combine combustion and boiler control in one system (see Functions 4 and 5).

Application of Control Mechanisms

The following installations are designed to illustrate types of a few of the several classes of controls used in gas firing.

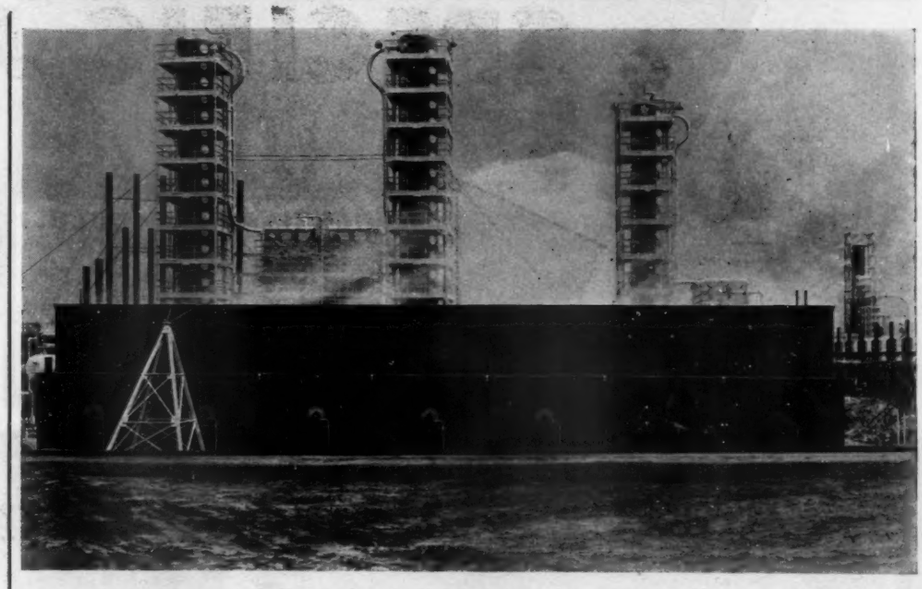
Fig. 1 shows the simplest form of automatic control—a boiler governor which admits or shuts off the gas and air as the load varies. This type of control will hold the steam pressure within 2 lb. plus or minus, but it may do so regardless of the combustion efficiency, for as a precautionary measure the damper is kept in a position favorable for full load. With a feed-water regulator attached to the shell or water column, controls of this class are desirable for small units, where a minimum of time can be given to operating. However, with a properly calibrated damper, operated as suggested under Fig. 1, excellent results may be obtained, assuming of course that the control is closely watched.

Fig. 2 shows the boiler governor operating the stack damper as well as the fuel-air supply. This is an improvement over Fig. 1, as the draft is varied with the load and a nearer approach to an acceptable air-gas ratio over a wider load range is secured. Controls of this class include those using steam blowers in the stack and certain types of louver controls which regulate the air supply to the burners.

There are two installations of commercial controls of a class known as damper regulators. In these layouts the steam actuates a motor which operates the uptake damper where natural draft is used, and both the uptake and inlet dampers for forced draft. In one a diaphragm valve is used in lieu of the conventional venturi-type burner. the air leading the gas on load changes. The air-gas ratio is fixed by the relative positions of this valve and the uptake damper. The several devices used in another setup are designed to compensate for changes in furnace pressure, incident to controls of this class, and to otherwise assist in maintaining a higher CO_2 at all ratings.

Fig. 3 shows the steam governing the fuel-air supply, the furnace regulator the "over fire" draft. Since the admission of air and gas to the furnace is more or less of a position set, if its pressure is not held constant, the burner cannot function as designed and the air-gas ratio will be

(Continued on Page 66)



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Mechanical Draft Cooling Towers

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modified. Controls of this class meet the requirements of Functions 1 and 2.

Another commercial control uses the steam and furnace-pressure regulators. In this system the air-gas ratio is fixed by the parallel operation of manually adjusted valves. The features of this control are an interlock between the regulators which prevents gas from being fed to the boiler while the damper is closed, and a line shaft which extends the steam control to other units of the battery. To secure these advantages a pilot medium is required, water under pressure being used in this case.

Fig. 4 shows a forced draft layout. The steam controlling the fuel and the inlet damper or fan, the furnace pressure the outlet damper or fan. Other arrangements of these regulators are used. The steam may control the fuel and the outlet, the furnace regulator the inlet damper; or, the furnace pressure may control the fuel and the outlet damper, the steam the inlet damper. However, with the gas-fired boilers the use of forced draft is usually limited to plants which preheat the air.

A forced-draft installation sometimes used on an oil-fired boiler, will include a calibrated control, based on the composition of the flue products. The differential created by the second and third boiler passes being used as the pilot medium. As shown, the furnace pressure controls the inlet damper, the steam the fuel and the uptake damper. However, if after a load change the desired steam flow-air flow ratio does not hold, the boiler meter readjusts the uptake damper to a position that will restore combustion conditions to normal. Selective type CO_2 or O_2 appliances are similarly employed.

From the foregoing remarks concerning the application of mechanical control devices it is evident that the combustion efficiency of any boiler unit, as fired, depends solely on the proper operation of the burners and dampers. Accordingly, a boiler equipped with burners which may be satisfactorily operated by the manipulation of a single valve, and a damper with but four or five effective positions would be much easier to control than one with some form of air flow-gas flow control and two or more dampers whose actions must be synchronized.

It is not the purpose of this article to discuss the relative merits of the various types of controls. The details of the control selected will depend on the uniformity of the gas, burner header pressure, design of the burners and the boiler, load characteristics and the control auxiliaries available at the plant.

Although fully automatic systems are a necessity in large installation and offer advantages which make them desirable in even the smallest plants, nevertheless the value of partial controls should not be underestimated.

Operating Instruments

All complete controls carry a full line of operating instruments, and a considerable portion of their cost is for such appliances. The outlay which may be justified for instruments of this kind, where partial or manual controls are used, depends, of course, on the fuel bill. It is believed, however, that there are but few plants which will not receive good returns on an investment made in instruments for determining draft and combustion conditions, and, where the gas is metered, load conditions as well. The required instruments in order of their importance from an economy standpoint are draft gages, combustion recorders, and steam flow or water meters.

Draft Gages

The chief function of the draft gage is to safeguard the furnace against wide variations in draft. Many natural-draft plants are operating with a furnace draft of 0.5 in. or higher, when from 0.10 to 0.25 in. could just as well be carried. A high draft makes for inefficiency in two ways, by increasing the leakage through the setting and the velocity of the gases through the boiler passes. A furnace draft gage also enables the fireman to duplicate "match" loads.

The stack or last-pass draft, although less important than the furnace draft is well worth checking. A draft gage on the last pass aids in stabilizing the furnace draft, for changes in the furnace temperature, as at heavy load swings, do not produce proportional changes in the stack temperature or draft, and, besides, barometric and other atmospheric changes may distort the stack draft. A draft gage on the last pass also serves as a guide in operating the breeching damper, so that the "chimney" pull on the units of a battery of boilers may be equalized. It is obvious that without draft gages to guide him the fireman cannot get the desired results.

Combustion Recorders

In order to secure acceptable combustion efficiency some form of combustion recorder is needed for partial and manual controls. Having decided on the best percentage of excess air for the gas and the boiler, a CO_2 recorder will serve as an accurate guide as to the combustion conditions at all ratings. Without a recorder the fireman must, as above stated, estimate the degree of combustion efficiency by an inspection of the fires.

Steam and Water Meters

If some means of ascertaining the amount of gas burned and the pounds of water evaporated are available, a "heat balance" may be struck at the end of a shift or of a day's run. Such test may be of greater value in improving boiler performance than periodic weighted water tests, which are often run with the boiler at or near rating or under constant-load conditions.

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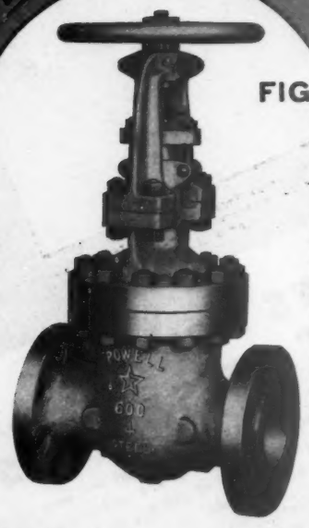

FIG. 6003—CAST STEEL

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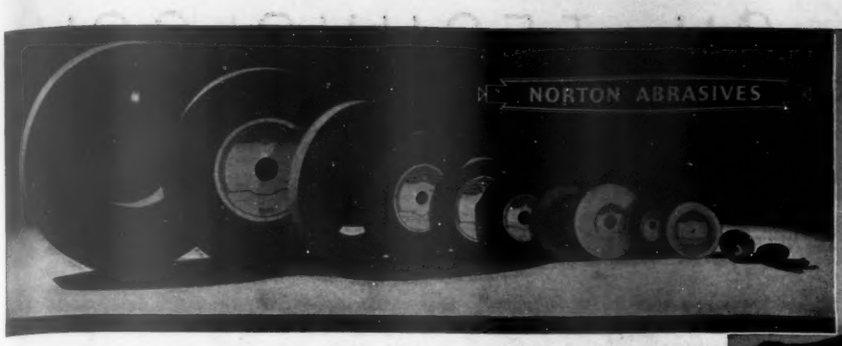

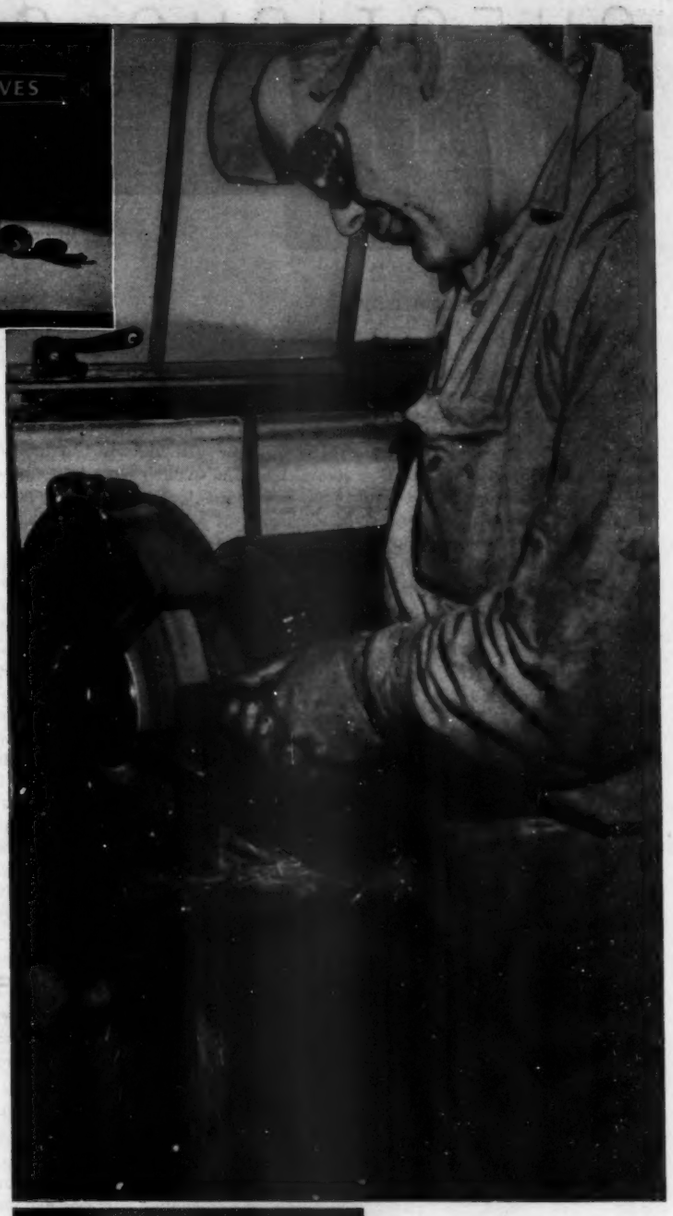

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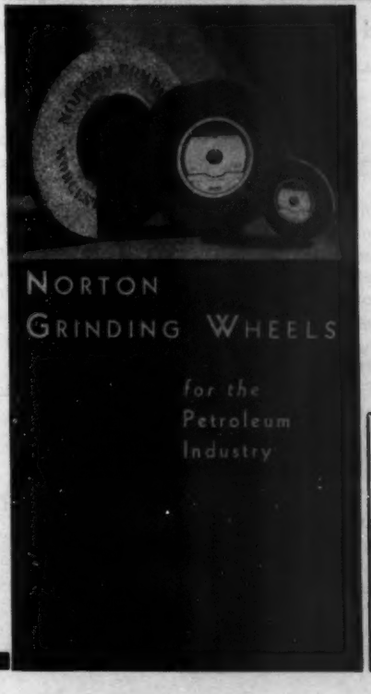

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QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

Authority for Temperature Basis of 60° F.

Is there any authority for the use of 60° F. as a basis for the volume adjustments of petroleum liquids shipped in tank cars and transit tanks?—C. M. B.

There appears to be no authority in the way of specifications of organizations or committees for the use of 60° F. as a standard volume-measurement temperature. In fact, the newest surveys of this subject do not even state that it is completely a standard—mentioning that a small amount of oil is sold at other temperatures. Doubtless, little or no oil is marketed in the United States that is not measured at the equivalent of its volume at 60° F.

However, the use of 60° F. as a basis is so common that it has a strong position and one that should not be altered for minor reasons. Perhaps the use of 60° F. is indirectly due to the fact hat specifications for specific, Baume and A.P.I. gravities have been determined at 60° F. (or 15.0°, 15.5° and 15.56° C.) for so many years. Thus, the volume would also be measured at 60° F. because the gravity and volume are an exact inverse function of temperature. All of the earlier books, Department of Commerce publications and references dating from 1904 onward seem to have adopted 60° F. as the temperature basis.

Even in 1864 the United States Petroleum Association adopted a set of instruments for determining Baume gravity which were graduated in accordance with the very formula which we now use—and which was based on the temperature of 60° F. Further, Russian and German scientists were using 15.5° C. (60° F.) as the basis of specific-gravity measurements during these same early years. It appears that public usage has settled definitely upon 60° F. as the proper volume-measurement temperature.

Test for Germ-Processed Oil

How can we test an oil to see if it is Germ-Processed oil?—C. E. B.

Germ-Processed is the copyrighted name of the oils sold by a well-known oil company. The term was first introduced in 1920 by Wells and Southcombe, Jr., in Soc. Chem. Ind., Vol. 51 (1920). These men found that animal and vegetable oils have lower coefficients of friction at large loads than pure mineral oils. They found that 5 per cent of tallow (or 0.5 per cent of oleic acid) reduced the friction by about 50 per cent.

Such materials can be identified as constituents of a lubricating oil by means of the "saponification number," A.S.T.M. Designation D94-39T, and the "neutralization number," A.S.T.M. Designation D188-27T, which tests are found in Petroleum Products and Lubricants, a publication of the American Society for Testing Materials, 260 South Broad Street, Philadelphia, Pa. The saponification number is used to identify unmixed animal and vegetable oils, or the amount of a known kind of animal or vegetable oil in a blended mineral-oil product. Each kind of compounding oil such as lard, tallow, castor, peanut, rapeseed, etc., has a particular saponification number, and hence the amount of the addition can be computed mathematically if the kind of oil addition is known. The compounding constituent is saponified (changed to a soap) by boiling the oil with alcoholic potassium hydroxide solution and the unused hydroxide is determined by titrating with standard hydrochloric acid solution using phenolphthalein as an indicator. The neutralization number is much the same sort of test and is used to indicate the presence of organic constituents which have acid characteristics or the contamination of the oil by alkalies or mineral acids. It is defined as the weight in milligrams of potassium hydroxide required to neutralize 1 g. of oil.

At present, and since about 1934, it appears that chloronated esters and perhaps even sulfonated organic materials have been used in Germ-Processed oils. Lincoln, Byrkit and Steiner discussed the use of chlorine compounds in "Chlorine Products Added to Lubricants," in Ind. Eng. Chem., Vol. 28, Page 1191 (1936). One way of identifying halogen or chlorine compounds is the Bielstein copper-wire test. A piece of carefully cleaned (burnished) copper wire is dipped into the oil and then heated in a flame. A strong green discoloration of the flame indicates the presence of chlorine compounds. The amount of chlorine compound that is used is very small and hence the test should be repeated several times. The agent that is referred to most often is alpha-alpha methyl dichlorostearate.

Heat-Transfer Rates

In the design of intercoolers for natural-gas compressors and other exchanger equipment, we cannot decide what heat transfer rates are commercially feasible. T. C. W.

In spite of all of the research work that has been done on heat-transfer rates, most of such information is not of great commercial value because the dirtying or fouling of the heat-exchange surfaces cannot be accurately foretold. In the face of this situation, you would probably be most safe if you would use the overall transfer rates that are given in such references as mechanical engineers handbooks, books on applied thermodynamics, etc.

An even better approach would be to use the film-transfer rates that are given in chemical engineering books such as those by Badger and McCabe, "Elements of Chemical Engineering," Walker, Lewis, McAdams and Gilliland, "Principles of Chemical Engineering," and McAdams, "Heat Transmission," all published by the McGraw-Hill Book Co., New York. However, if film rates are used it will be necessary to estimate the degree of fouling that will occur. Only two definite statements are made concerning the fouling of heat-exchange surfaces—first, Standards of Heat Exchanger Institute (Tubular Exchanger Section), 90 West Street, New York, and second, Nelson, W. L., "Petroleum Refinery Engineering," McGraw-Hill Book Co., New York.

Low fouling features (1,000 times resistance of dirt layer) are often recommended by exchanger manufacturers but after a few months of service the degree of fouling is usually much larger.

Viscosity Index of Lubricating-Oil Blends

Are there any methods of computing the viscosity-index of blends of lubricating oils from the indexes of the two blending stocks?—R. W. C.

I am not aware of any experimental data on the viscosity of lube-oil blends.

The viscosity-index can be computed by the use of blending charts such as those recommended by the A.S.T.M. in Designation D341-39. The method is as follows:

An oil having an index of 100, viscosity of 248 at 100° F. and 50 at 210° F. is to be mixed in equal amount with an oil of 100 index, viscosity of 1620 at 100° F. and 120 at 210° F. By means of Chart A, the viscosities of the blend are found to be 610 at 100° F. and 705 at 210° F. According to the viscosity-index chart, such an oil (the blend) would have an index of 100.

In this instance the result appears to be perfect because the blend was found to have an index of 100—and was prepared from two stocks each of which had an index of 100. The same is true when blending any two oils which have the same viscosity index. Refer to the tabulation.

However, when oils of different viscosity index are blended, the index computed by means of blending charts does not check closely with the index computed by assuming that it is the arithmetic average of the indexes of the two blending stocks. Thus, when blending oils of 100 index and 0 index in equal amounts, the resultant blend seldom shows an index of 50 by using the A.S.T.M. blending charts. Blending charts of other origin give results which deviate even more from the arithmetic average.

Although the blending charts may not be perfect, and thus contribute to inaccuracy in the estimation of the viscosity index, their use appears to be the best method now available. Viscosity indexes computed by assuming that the index of the blend is the average of the index of the components, is not dependable except when the indexes of the two stocks are nearly the same.

50-50 BLENDS OF LUBRICATING OILS

Blend No.	Low-vis. oil: Vis. at 100	Low-vis. oil: Vis. at 210	Low-vis. oil: Index	High-vis. oil: Vis. at 100	High-vis. oil: Vis. at 210	High-vis. oil: Index	Viscosity index: Computed A.S.T.M. charts	Viscosity index: Computed Wilson charts	Viscosity index: Computed Arithmetic average
1	344	56	104	338	49	—1	67	69	51½
2	296	50	76	357	49	19	49	53	47½
3	248	50	100	420	50	0	55	51	50
4	248	50	100	3,850	120	0	56	83	50
5	420	50	0	1,620	120	100	66.5	78.5	50
6	1,620	120	100	3,850	120	0	62	65	50
7	248	50	100	1,620	120	100	100	120	100
8	420	50	0	3,850	120	0	0	85	0
9	337	50	50	2,730	120	50	50	58	50

Mid-Contintent Area August Crude Runs Continue Downward

ESTIMATED daily crude runs in the Mid-Continent area continued on a downward trend in August with a total of 546,270 bbl. to be processed, compared with 547,940 bbl. in July, a reduction of 1,670 bbl.

Refineries in North Louisiana and Arkansas have shown a steady climb in crude runs to stills over the past 3 months. In the North Louisiana area the aggregate increase is 4,395 bbl. daily and in Arkansas the gain was 1,300 bbl. for August. Other plants in the Mid-Continent area report generally reduced operations, which have continued since June.

The Edgar C. Johnston refinery at Vicksburg, Miss., is now in full operation, charging 4,000 bbl. of crude daily from the Tinsley field. Shipments of refined products, including a low-end-point gasoline, a high-gravity distillate and fuel oils, will be moved from the plant by tank car, truck and river barge.

Mid-Continent Crude Runs

Average Daily (Barrels)

(Advance estimate compiled by The Oil and Gas Journal)

	1938	1939	1940
January	529,710	503,405	532,085
February	507,985	494,910	526,785
March	491,935	497,180	531,645
April	532,120	523,535	532,845
May	527,315	534,535	556,100
June	540,005	541,090	552,935
July	557,520	550,755	547,940
August	554,810	556,095	543,670
September	555,695	550,830	.....
October	531,325	547,725	.....
November	524,035	537,375	.....
December	503,530	527,230	.....

Operations by Refinery District

Daily crude runs

	Aug.	July	Decr.
Arkansas	31,700	30,400	*1,300
East Texas	37,850	40,800	2,950
Kansas	138,700	141,350	2,650
Mississippi	4,000	.....	.....
N. Central Texas	38,125	39,825	1,700
North Louisiana	44,195	39,800	*4,395
Oklahoma	154,650	156,000	1,350
Southwest Texas	16,750	17,025	275
W. Texas Panhandle	81,700	82,740	1,040
Total	543,670	547,940	4,270

*Increase.

DAILY RUNS BY REFINERIES

OKLAHOMA

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Anderson-Prichard Ref. Corp., Cyril	8,000	6,500	6,500
Bareco Oil Co., Barnsdall	5,000	4,000	4,000
Bell Oil & Gas Co., Granfield	4,500	3,000	3,000
Ben Franklin Ref. Co., Ardmore	6,000	3,750	4,000
Black Gold Ref. Co., Oklahoma City	2,500	2,000	2,000
Champlin Ref. Co., Enid	16,000	15,000	15,000
Cities Service Oil Co., Okmulgee	4,000	(*)	(*)
Cities Service Oil Co., Ponca City	12,000	10,000	10,000
Continental Oil Co., Ponca City	28,000	20,000	23,000
Cushing Ref. & Gasoline Co., Cushing	4,200	4,000	3,500
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Johnson Oil Ref. Co., Cleveland	6,000	4,000	4,000
Mid-Continent Pet. Corp., West Tulsa	35,000	23,000	21,000
Omar Ref. Co., Garber	5,000	(*)	(*)
Phillips Pet. Co., Okmulgee	6,000	5,000	5,700
Peppers Gasoline Co., Oklahoma City	500	400	400
Rock Island Ref. Co., Beckett	7,500	6,200	6,300
Sinclair Ref. Co., Sand Springs	6,000	5,600	5,600
Sun Oil Co., Yale	5,000	(*)	(*)
Sunray Oil Co., Allen	7,000	4,600	4,000
Texas Co., West Tulsa	16,000	15,000	15,000
Tide Water Oil Co., Drumright	12,000	10,000	10,000
Wilcox Ref. Division, Bristow	5,000	3,600	4,000
Total	211,200	154,650	156,000

*Shut down.

ARKANSAS

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Berry Asphalt Co., Waterloo	2,000	1,000	1,200
Henry H. Cross, Smackover	6,000	3,500	3,500
Lion Oil Ref. Co., El Dorado	17,000	17,000	16,000
Macmillan Pet. Corp., Norphlet	2,500	2,000	2,000
Root Ref. Co., El Dorado	10,000	8,000	7,500
Stephens Ref. Co., Stephens	700	200	200
Total	38,200	31,700	30,400

KANSAS

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Bareco Oil Co., Wichita	5,000	5,000	5,000
Bay Pet. Co., McPherson	4,000	3,000	3,300
Chanute Ref. Co., Chanute	2,000	1,000	1,800
Consumers Cooperative Assn., Phillipsburg	3,000	2,750	3,000
Derby Oil Co., Wichita	8,000	6,000	7,000
El Dorado Ref. Co., Eldorado	7,000	5,000	5,000
Falcon Ref. Co., Inc., Great Bend	2,500	1,200	1,500
Globe Oil & Ref. Co., McPherson	15,000	12,000	15,000
Kanotex Ref. Co., Arkansas City	12,000	7,000	7,000
National Ref. Co., Coffeyville	8,000	8,000	4,200
Pet. Products Co., Chanute	1,250	(*)	(*)
Phillips Pet. Co., Kansas City	23,000	17,000	17,400
Roper Pet. Co., Parsons	750	(*)	(*)
Shallow Water Ref. Co., Scott City	2,000	1,250	1,150
Sinclair Ref. Co., Coffeyville	12,000	10,000	9,500
Sinclair Ref. Co., Argentine	11,000	10,000	9,500
Skelly Oil Co., Eldorado	23,000	20,000	20,000
Socony-Vacuum Oil Co., Inc., Augusta	25,000	19,000	20,000
Standard Oil Co. (Indiana), Neodesha	7,500	7,000	7,000
Vickers Pet. Co., Potwin	4,000	3,500	4,000
Total	176,500	138,700	141,350

*Shut down.

NORTH LOUISIANA

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Arkansas Fuel Oil Co., Bossier City	23,000	23,000	19,000
Atlas Pipe Line Co., Shreveport	12,500	6,000	6,000
Bayou State Oil Corp., Hosston	800	700	800
Evansville Oil Corp., Cotton Valley	1,000	645	650
Pennant Ref. Co., Princeton	750	500	400
Premier Oil Ref. Co. of Texas, Cotton Valley	3,500	3,000	3,000
Rodessa Oil & Ref. Corp., Cedar Grove	12,000	8,000	8,000
Stanolind Oil & Gas Co., Superior	5,000	2,350	2,000
Total	58,550	44,195	39,850

MISSISSIPPI

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Edgar C. Johnston, Vicksburg	4,000	4,000	.....

EAST TEXAS

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Beacon Oil & Ref. Co., Henderson	4,500	(*)	500
Danciger Refs., Inc., Longview	6,000	(*)	(*)
East Texas Ref. Corp., Longview	10,000	5,900	5,000
Gladewater Ref. Co., Gladewater	3,000	2,000	2,000
Hurricane Pet. Corp., Overton	5,000	(*)	(*)
Hurricane Pet. Corp., Arp	3,300	(*)	(*)
Independent Ref. Co., Arp	5,000	2,600	3,000
Lynch Ref. Co. No. 1, Kilgore	3,000	2,400	2,400
Lynch Ref. Co. No. 2, Kilgore	4,000	2,900	2,400
Magnolia Pet. Co., Corsicana	5,000	3,500	3,500
McMurrey Ref. Co., Tyler	10,000	4,550	4,500
Premier Oil Ref. Co. of Texas, Gregglown	4,000	3,000	3,000
Talco Asphalt & Ref. Co., Mount Pleasant	8,000	7,000	7,000
Texas Co., Dallas	16,000	7,500	7,500
Total	86,800	40,450	40,800

*Shut down.

NORTH CENTRAL TEXAS

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Baird Refining Co., Baird	1,500	900	950
Bryson Pipe Line & Refining Co., Bryson	2,000	950	1,000
Bryson Ref. Co., Inc., Bryson	1,500	1,200	1,300
Coleman Ref. Co., Coleman	800	400	400
Continental Oil Co., Wichita Falls	6,000	4,800	5,500
Cosden Pet. Corp., Graham	2,500	1,000	900
Falls Ref. Co., Wichita Falls	2,500	100	100
Gratex Ref. Co., Graham	500	300	300
Gulf Oil Corp., Fort Worth	8,000	6,500	6,500
Jacksboro Ref. Co., Jacksboro	400	100	100
La Salle Pet. Corp., Burkburnett	3,500	800	1,200
Magnolia Pet. Co., Fort Worth	7,500	6,000	5,750
Muenster Ref. Co., Muenster	1,800	600	600
North Texas Ref. Co., Gainesville	1,000	600	550
Ohio Oil Co., Fort Worth	5,000	3,750	4,000
Olney Oil & Ref. Co., North Olney	3,500	2,000	2,000
Panhandle Ref. Co., Wichita Falls	4,200	2,600	3,000
Panhandle Ref. Co., Lueders	1,500	725	850
Southland Ref. Co., Olney	500	200	200
Taylor Ref. Co., Taylor	4,000	(*)	(*)
Texas Pacific Coal & Oil Co., Caddo	800	500	500
Tydal Ref. Co., Gainesville	2,000	600	600
W. T. Waggoner est., Vernon	5,000	3,500	3,500
Total	66,000	38,125	39,800

*Shut down.

SOUTHWEST TEXAS

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Border Oil & Ref. Co., Sullivan City	1,000	700	600
Eggleston Oil Products Co., Three Rivers	1,000	700	775
Humble Oil & Ref. Co., San Antonio	5,000	4,000	3,750
Magnolia Pet. Co., Luling	8,000	4,500	5,000
Phoenix Ref. Co., San Antonio	2,000	1,000	1,000
Phoenix Ref. Co., Pettus	900	600	650
Pioneer Oil & Ref. Co., Somerset	2,000	750	750
Rado Ref. & Prod. Co., McAllen	800	500	500
Texas Co., San Antonio	5,000	4,000	4,000
Total	25,700	16,750	17,025

WEST TEXAS AND PANHANDLE

Company and location—	Daily capacity	Av. dly. runs August	Av. dly. runs July
Aero Gas & Ref. Co., Fort Stockton	350	100	100
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Cosden Oil Co., Big Spring	14,000	11,000	10,000
Danciger Refs., Inc., Pampa	6,500	4,500	5,000
Danube Oil Corp., Borger	800	600	600
Petrol Ref. Co., Lubbock	500	(*)	(*)
Gulf Oil Corp., Sweetwater	7,000	6,500	6,500
Howard County Ref. Co., Big Spring	2,000	650	650
Motor Fuels Corp., Levelland	4,000	3,200	3,200
Moutray Oil Co., Hawley	1,200	850	810
Onyx Ref. Corp., Hawley	2,000	1,750	1,800
Pawward Ref. Co., Shamrock	1,000	450	450
Phillips Pet. Co., Borger	35,000	25,900	26,130
Post Refining Co., Rotan	800	400	350
Shamrock Oil & Gas Corp., Sunray	3,000	2,000	2,000
Shamrock Oil & Gas Corp., Lefors	1,000	850	900
Stamford Ref. Co., Stamford	450	300	300
Standard Oil Co. of Texas, El Paso	14,000	8,000	8,300
Star Light Ref. Co., Ballinger	1,000	550	550
Texas Co., El Paso	2,000	1,500	1,500
Texas Co., Amarillo	6,000	4,000	4,000
Western Ref. Co., Fort Stockton	1,000	800	800
Wickett Pet. Co., Wickett	3,500	800	800
Total	120,200	81,700	82,740

*Shut down.

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MODEL No.	MAXIMUM LINER SIZE	STROKE	MAXIMUM WORKING PRESSURE	PRESSURE RATING OF FULL-SIZE LINER	RATED SPEED	RATED HORSEPOWER	WEIGHT POUNDS
C-100	6¼"	10	1,500	520	65	100	11,100
C-150	6¾"	12	2,000	555	65	150	17,000
C-250	7¼"	15	2,500	710	60	250	28,975
C-350	7¾"	18	3,000	800	55	350	36,400

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THE NATIONAL

FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

WEST TEXAS—Both of the recent discoveries in the district, one each being in Ward and Pecos counties, are being carried deeper in search of more prolific pay zones. A new field was in prospect for Andrews County.

WEST CENTRAL TEXAS—New wildcat locations featured a comparatively quiet week in the district, there being wildcats staked in Shackelford, Fisher, Jones, Coleman and San Saba counties.

SOUTHEAST NEW MEXICO—The increasingly active Eddy County area was given another new wildcat test. This makes a total of seven operations for the area surrounding Lake McMillan and Lake Avalon.

NORTH TEXAS—A new and deeper producing horizon was opened for the Seay field south of Ringgold in Montague County and a new Caddo lime producing area was indicated by a wildcat in Clay County.

EASTERN TEXAS—Two new shallow wildcat tests were staked in Navarro County and deep tests were staked one each in Red River and Van Zandt counties.

OKLAHOMA—A third pay zone was proven poductive in the Cumberland pool, Marshall-Bryan counties, and the second and third producers in that area were officially completed. Romulus pool discovery well in St. Louis district, Pottawatomie County, averaged 30 bbl. an hour on potential test.

KANSAS—A Lansing lime pool was opened in the Eveleigh area, Barton County. A northwest extension well in the Zenith pool, Stafford County, made potential of 2,968 bbl. of oil from Viola lime on completion test.

MICHIGAN—A fair-sized boom has started as a result of the successful completion of Rayburn's Yenior and Sun's McKenna discoveries in Arenac and Gladwin counties.

SOUTHWEST TEXAS—The old San Antonio district, which has been inactive for some time, was revived with an Austin chalk well in Caldwell County. La Salle County's Wilcox discovery greatly increases the size of the prospective producing area in this pay.

KENTUCKY—The Hebbardsville pool in Henderson County looked much better after the second well came in for 310 bbl. in the lower Jett sand.

CALIFORNIA—R. R. Bush Oil Co.'s southwestern Inglewood outpost penetrated an abnormal section for this area but may open up a new deep pay.

COMPLETIONS IN ALL FIELDS . . .

(Week Ended August 17, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	103	18	6	127	3,880	2,313
Ohio	9	12	11	32	983	421
Indiana	6	2	5	13	262	159
Kentucky	6	1	8	15	264	458
Illinois	69	0	27	96	2,373	2,215
Michigan	5	1	10	16	750	884
Kansas	38	1	8	47	1,115	784
Oklahoma	32	2	11	45	1,138	1,187
Texas:						
North Central Texas	18	1	10	29	1,894	1,533
West Texas	28	1	1	30	1,208	1,155
Texas Panhandle	15	0	0	15	391	252
Eastern Texas	9	0	0	9	361	477
Gulf Coast Texas	17	0	3	20	822	860
Southwest Texas	15	3	17	35	1,421	1,625
Total Texas	102	5	31	138	6,097	5,902
North Louisiana	5	2	2	9	374	331
Gulf Coast Louisiana	11	0	3	14	675	415
Total Louisiana	16	2	5	23	1,049	746
Arkansas	1	0	3	4	119	167
Montana	2	6	1	9	131	104
Wyoming	2	0	3	5	101	79
Colorado	0	0	0	0	11	15
New Mexico	10	0	2	12	377	357
California	17	0	0	17	664	581
Miscellaneous	1	0	5	6	121	23
Total United States	419	50	136	605	19,435	16,395
Total previous week	398	48	118	564		
Week ended Aug. 19, 1939	356	40	112	508		

SUMMARY OF OUTSTANDING FIELDS . . .

(Week Ended August 17, 1940)

FIELD—	Active operations	Oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS					
K.M.A.	44	2	1,454	1,432	35,557
Wasson	60	9	7,940	908	26,212
Ector County	49	3	3,239	2,231	40,500
Hull-Silk	34	1	1,130	332	7,129
Jones County	15	1	18	629	6,150
East Texas	17	4	104	25,980	374,896
OKLAHOMA					
Cumberland	8	2	1,407	3	new
Oklahoma City	13	0	0	835	98,850
KANSAS					
Bornholdt	12	2	402	104	2,400
Burnett	9	1	350	116	5,485
Silica	9	4	1,350	644	15,350
Trapp	11	5	1,478	585	14,300
LA-ARK-TEX					
Cotton Valley, La.	3	1	860	163	13,525
Olla, La.	8	0	0	20	2,460
MICHIGAN					
Adams	11	0	0	16	1,449
CALIFORNIA					
Montebello	11	0	0	343	18,250
ILLINOIS					
Salem	74	27	9,460	2,229	171,200
Centralia	9	8	6,176	714	36,000
Louden	26	8	2,374	1,578	77,200
Other basin fields	277	26	4,622	2,382	97,300
Old fields	....	....	.....	.....	11,000
NEW MEXICO					
Lea County	47	10	2,980	2,542	85,100
Eddy County	56	0	0	604	16,260
MISSISSIPPI					
Tinsley	9	0	0	68	14,294

NOTE: In the completions table presented above, there has been a change in the method of computing total completions to date. Formerly the total was compiled from week to week. The total given herewith is made up by taking the totals reported in monthly summaries and adding current weekly totals. The difference between the two totals is due to the fact that some wells are reported late, others may be included in weekly reports which are not completions, but recompletions of old wells, and so forth. The principal change consists of the addition of a large number of wells in the eastern fields. Miscellaneous completions are from Mississippi, Missouri, Nebraska and other new producing states.

By
STAFF CORRESPONDENT

Initial Production Declines With Drilling Up of Fields

THE decline in Illinois' production has definitely slowed down as 392,700 bbl. were produced during the past week. This is a decline from the previous week of 2,750 bbl. Considering individual fields, Louden's production was up 4,100 bbl., Salem off 5,000 bbl., Centralia off 5,220 bbl., other basin fields up 2,220 bbl. and old fields up 1,157 bbl.

There were 96 completions in Illinois during the past week of which 27 were dry holes. Four locations were abandoned. Centralia had 12 completions, of which 8 were producers, 2 dry and 2 junked holes. Total initial production was 6,176 bbl. or 772 bbl. per well, owing to the relatively high Devonian initials. One Devonian well, however, made 160 bbl. in 4 hours, went dead and was abandoned. Louden had 11 completions, of which 3 were dry. The initial production averaged 297 bbl. Of Salem's 30 completions, 27 were producers with an average initial of 346 bbl. In the remainder of the basin, there were 43 completions, 26 of which produced a total initial of 4,622 bbl. or an average of 171 bbl. The number of completions producing water along with the oil is also fairly large. There was 1 in Centralia, and 12 in miscellaneous basin completions.

The new pools in Bond, Montgomery and Hamilton counties are scenes of considerable activity as offsets are being pushed down and work is starting on outer locations. None of them appear to be in the major pool class, however.

Recompletions in Salem Field

As production declines, operators in the Salem field are picking up production in other sands. There are many operations of this kind, of which over 75 have been reported in recent numbers of The Oil and Gas Journal. Many of these operations are not reported, and the following account may be considered as relating to a few examples, rather than as a complete report of these activities.

Kingwood & Bell, 1 Dodson, NE SE NW 16-1n-2e, was producing from the McClosky and was making 15 bbl. per day and a show of water. Casing was perforated at 1,908-14 and 1,920-28 ft., to obtain Benoist production and the well made 28 bbl. oil and 75 bbl. water after perforation. Kingwood, 1 Shanafelt C, SE SE NW 16-2n-2e, a Devonian well was plugged back from 3,596 to 3,587 ft., and casing was perforated at the McClosky pay, 2,012-66 ft. Production from both pays is now 61 bbl. oil and 5 bbl. water.

In the Curry Youngblood lease in the E½ SE 20-2n-2e, eight wells have recently been recompleted. No. 8 Youngblood, SE NE SE 20-2n-2e, was down to 15 bbl. in the Devonian. It was plugged back to 2,340 ft. and casing was perforated at 2,160-2,220 ft. After two acid treatments of 1,500 gal. and 1,000 gal. respectively, the well produced 40 bbl. No. 4, NE SE SE 30-2n-2e, was perforated at 1,757-85 and 1,830-60 ft., and is making 20 bbl. from the Benoist, Aux Vases and McClosky. No. 5, SE SE SE, same section, was perforated at 1,840-70 ft., and is making 20 bbl. from McClosky and Aux Vases. No. 6 was down to 10 bbl. in the Devonian and was plugged back to the McClosky. After acidization it pumped 5 bbl. oil and 90 bbl. water. No. 9 and No. 10 were treated in the same way and made 70 bbl. each.

ILLINOIS COMPLETIONS

Bond County

W. E. Henderson, 1 Hargood . . . . NE NE SW 36-7n-4w
Dry. T.D. 475 ft.
Max Pray, 1 Davis . . . . . NE NW NW 9-6n-2w
Location abandoned.
P. Doran, 1 E. Jett . . . . . NW SW SE 9-6n-2w
Dry. Base Pennsylvanian 755 ft., Cypress 893 ft., Paint Creek 951 ft., Benoist 1,055 ft., T.D. 1,062 ft.
National Pet., 1 Spindler Inv. NW NW NW 10-6n-2w
Pumped 209 bbl., 20 and 40-qt. shot, Benoist pay 1,010-24 ft., T.D. 2,454 ft., P.B. to 1,026 ft. Opener Woburn pool.

Clark County

Harr & Hawley, 1 Pinnell . . . . SE NW SE 6-11n-14w
Dry. Trenton 2,305 ft., 2,000 gal. acid, T.D. 2,599 ft., P.B. to 2,480 ft.

Clay County

Schulman Bros., 1 G. F. Hardy E½ NE NE 16-3n-7e
Dry. Golconda 2,508 ft., Benoist 2,788 ft., McClosky 2,944-50 ft., T.D. 2,890 ft.
Pure, 1 Atterbury . . . . . S½ SW SW 28-2n-8e
Flowed 181 bbl., 6,000 gal. acid, Fredonia 3,017 ft., slight show oil 2,912-20 ft., lower pay 3,017-20 ft., T.D. 3,068 ft.
Pure, 2 Brissenden . . . . . E½ NW SE 32-2n-8e
Flowed 227 bbl. in 9 hr., naturally, flowed 1,106 bbl., 5,000 gal. acid, McClosky 3,032-37 ft. and 3,043-49 ft., T.D. 3,105 ft.

Clinton County

Hughes Pet., 1 B. Holman . . . . . NE SE SE 10-2n-1w
Dry. Bethel 1,464 ft., Devonian 2,952 ft., T.D. 3,053 ft., P.B. to 1,470 ft.
Menhall, 1 Korman . . . . . SW NW NW 4-1n-3w
Dry. Cypress 1,017 ft., T.D. 1,031 ft.
Max Pray, 1 Brameier . . . . . SW SE SW 2-1n-2w
Abandoned location.
Ford, 1 Brink . . . . . SE SW SE 3-1n-2w
Dry. Bethel 1,312 ft., T.D. 1,320 ft.
Max Pray, 1 Monken . . . . . NE SW NW 11-1n-2w
Pumped 125 bbl. oil and 6 bbl. water, 3-qt. shot, Benoist 1,321-25 ft., T.D. 1,327 ft.
L. L. Benoist, 5 E. Knolhoff . . . NW NE NW 11-1n-2w
Pumped 60 bbl. oil and 5 bbl. water, 2-qt. shot, Benoist 1,320-23 ft., T.D. 1,324½ ft.
L. L. Benoist, 4 E. Knolhoff . . . NE NW NW 11-1n-2w
Pumped 50 bbl. oil and 5 bbl. water, 3-qt. shot, Benoist 1,319-23 ft., T.D. 1,324 ft.
E. F. Jones, 1 Lippert . . . . . S½ SE SE 27-2n-1w
Dry. Chattanooga 2,865 ft., Devonian 2,940 ft., porosity 2,964-70 ft.

Centralia Field—Clinton-Marion Counties

Adams, 14 Copple . . . . . SW SW SE 35-2n-1w
Pumped 30 bbl., Stein 1,208-23 ft., Benoist 1,345-64 ft., 10-qt. shot, producing both sands, T.D. 1,364 ft.
Adams, 16 Copple . . . . . NE NE SW 35-2n-1w
Junked. Stein 1,205-25 ft., Benoist 1,350 ft., 30-qt. shot.
Morgan, 3-D Allison . . . . . SW SW 35-2n-1w
Flowed 835 bbl., 2,000 gal. acid, Devonian 2,909-16 ft.
J. G. McNeil, 1 Kraft . . . . . SW NW NW 36-2n-1w
Dry. Show oil, Devonian 2,906-31 ft.
Adams, 4 Felton . . . . . NE NE NW 1-1n-1e
Pumped 62 bbl. in 12 hr., pumped off, Benoist 1,331 ft., 20-qt. shot 1,342-50 ft.
Thompson Drlg., 1-A School . . . . . SE SW SW 1-1n-1w
Pumped 175 bbl., flowed 400 bbl. in 20 hr., acidized with 3,000 gal. and would not flow, 30-qt. shot, Devonian 2,901-10 ft.
Thompson Drlg., 1 School . . . . . SE SW SW 1-1n-1w
Pumped 30 bbl., 20-qt. shot, Stein 1,198 ft., T.D. 1,527 ft., P.B. to 1,220 ft.
Shell, 16-C Criley . . . . . W½ NW NE 2-1n-1w
Junked. Devonian 2,890-2,904 ft., T.D. 2,912 ft.
Shell, 16-D Criley . . . . . W½ NE NE 2-1n-1w
Flowed 696 bbl., 5,000 gal. acid, Devonian 2,888-2,912 ft.
Shell, 18-C Criley . . . . . E½ NW NE 2-1n-1w
Flowed 2,400 bbl. oil and 560 bbl. water, 5,000 gal. acid, 2,896-2,909 ft.
Fotiades, 1 Criley . . . . . NW NE NW 2-1n-1w
Flowed 1,950 bbl., Devonian 2,897-2,909 ft.
Amundsen et al 1-A Allison . . . SE NE NE 12-1n-1w
Dry. Flowed 160 bbl. in 4 hr., went to water, Devonian 2,929-33 ft.

Fayette County—Louden Field

Carter, 1 R. Miller . . . . . NW NE SE 1-8n-3e
Pumped 29 bbl., 30-qt. shot, Cypress 1,468-90 ft.
Carter, 1 G. Wood . . . . . SW SE NW 10-8n-3e
Pumped 138 bbl., Cypress 1,499-1,522 ft., T.D. 1,601 ft., P.B. to 1,522 ft.
Carter, 2 Taylor-Doty . . . . . SE SW SE 12-8n-3e
Dry. Cypress 1,495 ft., sand 1,528-54 ft., T.D. 1,601 ft.
Carter 26-1 E. Rhodes . . . . . NW NW NW 26-8n-3e
Gas-input well, Weller, Paint Creek stray, and Bethel perforated, T.D. 1,534 ft.
Carter, 4 Pearl McClain . . . . . SE SE SE 32-8n-3e
Flowed 948 bbl., 30, 40 and 15-qt. shots, Cypress 1,467-1,512 ft., Paint Creek 1,526-63 ft., Benoist 1,578-92 ft.
Carter, 5 M. Taylor . . . . . NE NW SW 33-8n-3e
Pumped 504 bbl. 40, 60, and 30-qt. shots, Cypress 1,452-1,505 ft., Paint Creek 1,526-56 ft., Bethel 1,568-91 ft., T.D. 1,592 ft.
Nash Redwine, 1 Rhodes . . . . . SE NE NE 3-7n-3e
Dry. Drilled deeper 1,656-1,700½ ft.
Carter, 2 Koberlin-B . . . . . NW SE NW 4-7n-3e
Pumped 125 bbl., 25-qt. shot, Cypress 1,460 ft., Paint Creek 1,535 ft., T.D. 1,561 ft.
Krvsl, 1 Devore . . . . . NW SW NW 6-7n-3e
Dry. Cypress 1,522 ft., T.D. 1,534 ft.
Carter, 4 B. Kimbrell . . . . . SE SW SW 8-7n-3e
Pumped 168 bbl., 10, 15, and 30-qt. shots, Cypress 1,424-1,504 ft., Paint Creek 1,529-50 ft., Bethel 1,558-78 ft.
Texas, 9 O. Neatherlev . . . . . SW NW NE 6-6n-3e
Pumped 266 bbl., 10-qt. shot, Cypress 1,525-42 ft.
Texas, 10 O. Neatherlev . . . . . NW NW NE 6-6n-3e
Pumped 196 bbl., 10-qt. shot, Cypress 1,538-59 ft., T.D. 1,566 ft.

Fayette County—St. James Field

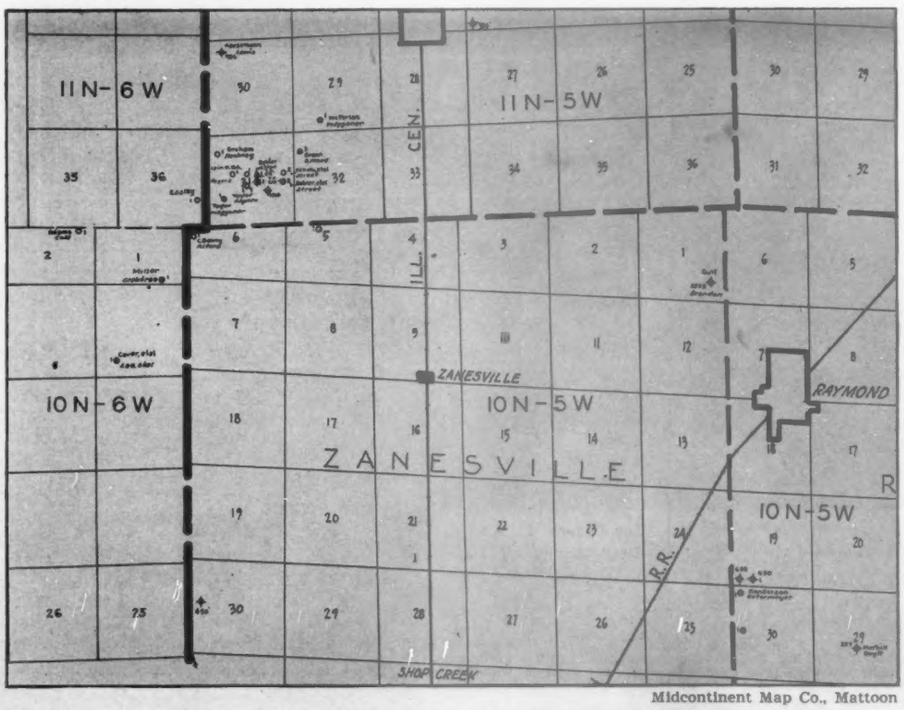
Ohio, 8 C. T. Williams . . . . . NE SW SE 36-6n-2e
Pumped 54 bbl., 8-qt. shot, Cypress 1,598-1,617 ft.
Ohio, 4 J. Swann . . . . . NW SE SE 36-6n-2e
Pumped 60 bbl., 8-qt. shot, Cypress 1,586-1,611 ft., T.D. 1,612 ft.
Texas, 11 C. Wright . . . . . SE NE SW 31-6n-3e
Swabbed 200 bbl., 10-qt. shot, Cypress 1,592-1,610 ft.

Iroquois County

Whitton, 1 Gannon . . . . . NE SW SE 5-27n-12w
Dry. Elev. 643 ft., Silurian 385 ft., Edgewood 815 ft., Galena 1,013 ft., Decorah 1,250 ft., Platteville 1,310 ft., T.D. 1,485 ft.

Knox County

Lomax, 1 Nelson . . . . . SE SW NE 20-10-1e
Dry. Niagaran 490 ft., Trenton 975 ft., St. Peter 1,315 ft., T.D. 1,355 ft.



Midcontinent Map Co., Mattoon

A portion of Montgomery County, Illinois, showing the two recently discovered pools

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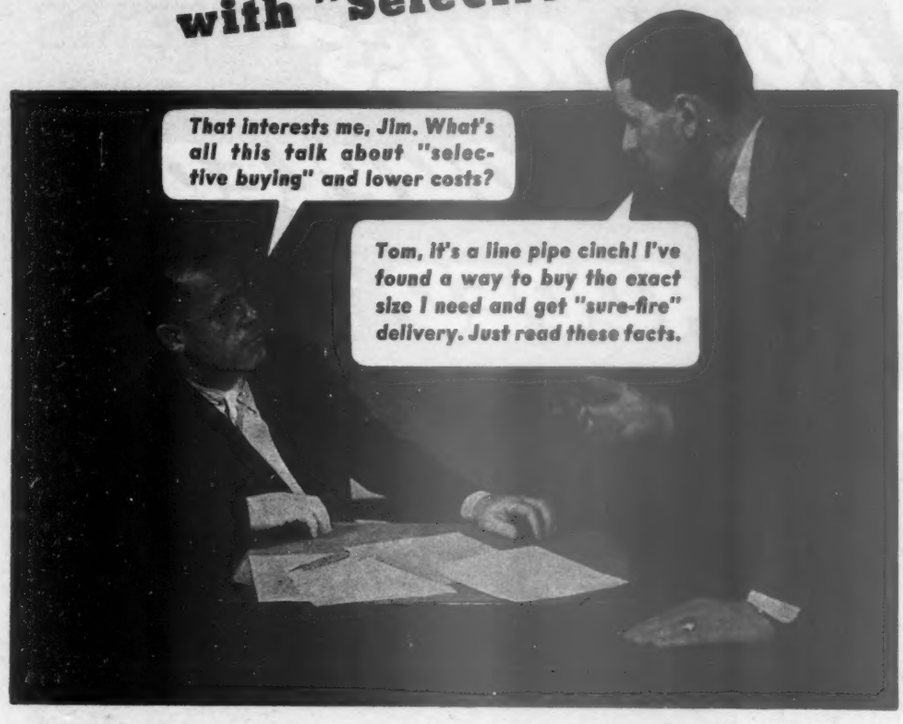
To provide for expanding domestic and industrial markets and an increase from 90 to 100 million cubic feet in Detroit's daily demand, progressive Michigan Gas Transmission Corporation is hastening construction of 55 new miles of 24" OD loop line between Montezuma and Zionsville, Indiana —completing the paralleling of its 20" natural-gas transmission line from the Illinois-Indiana line to Zionsville, first looped in 1939 with 15 miles of 24" OD pipe.

So, for the third successive time* during a four-year period, Dresser Couplings get the call on this important system. To date, well over 15,000 "Dressers" have brought Simplicity, Speed, Flexibility, and Tightness to its three pipe-line installations alone—proof that "ALL FOUR" Dresser advantages are vital in making and keeping modern pipe-lines modern! DRESSER MANUFACTURING COMPANY, BRADFORD, PA.

Third Call for Dresser Couplings

*In 1936, Michigan Gas Transmission Corporation's 22" OD main carrier from the then eastern terminus at Zionsville, Indiana, to Detroit, Michigan, was Dresser-coupled (175 miles). In 1939, two loops of 24" OD pipe totalling approximately 15 miles were also joined with "Dressers." In 1940, 55 additional miles of 24" OD loop line, *again* joined with "Dressers" and with "Armored" Gaskets for cathodic protection, are being laid; maximum working pressure: 600 psi.; contractor: T. R. Jones, Dallas, Tex.

I Cut Line Pipe Costs with "Selective Buying"


That interests me, Jim. What's all this talk about "selective buying" and lower costs?
Tom, it's a line pipe cinch! I've found a way to buy the exact size I need and get "sure-fire" delivery. Just read these facts.

What is "selective buying"? It's the ARMCO way of trimming costs on gas gathering lines. You select the weight of pipe best suited to your service requirements—in any diameter. No excess metal or dead weight to burden your purse. You can order a few hundred feet or miles of "Spiral Welded" with equal assurance of quick, reliable delivery. The work moves on schedule.

Aside from all this, ARMCO Spiral Welded Pipe offers many other advantages. Where conditions permit you can use 50-foot lengths to reduce unloading, handling and stringing costs. Longer lengths mean fewer joints to weld in the field. Many experienced contractors say ARMCO Pipe field welds faster and therefore is more economical than other types.

Something new? Not at all. Many oil men discovered the "extras" in ARMCO Pipe more than ten years ago. They have used it in hundreds of gas gathering installations and keep on ordering it.

Try "selective buying" on that next development or extension and watch ARMCO "Spiral Welded" save you money all along the line. Diameters range from 6 to 36 inches, wall thicknesses from 7/64 to ½-inch. Ask us for prices and reliable delivery promises. The American Rolling Mill Company, Pipe Sales Division, 2241 Curtis Street, Middletown, Ohio; 501 Mayo Building, Tulsa, Oklahoma; 3500 Maury Street, Houston, Texas.

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No mud or water can enter into the mechanism of the new Mud Pump Duragauge. It is made with a fluid filled system, with a non-corrosive stainless steel bulb.

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ASHCROFT GAUGES MANNING, MAXWELL & MOORE, INC. BRIDGEPORT CONNECTICUT

Marion County—Salem Field

Texas, 27 M. Williams ..... SW SW SW 32-2n-2e
Flowed 150 bbl., 5,000 gal. acid, McClosky 1,870-78 ft., Salem 2,083 ft., T.D. 2,292 ft., P.B. to 2,265 ft.
Jones & Jones, 1 Ross ..... NW NW NW 27-2n-2e
Dry. Golconda 1,602 ft., Cypress 1,697 ft., Paint Creek 1,820 ft., Benoist 1,881 ft., T.D. 1,895 ft.
Texas, 7 J. E. Hamlin ..... NW NE 4-2n-2e
Pumped 85 bbl., 3,000 gal. acid, McClosky 2,125-44 ft.
Kingwood, 1 E. Rogers ..... NW NE SE 21-2n-2e
Dry. T.D. 2,320 ft., P.B. to 2,100 ft.
Magnolia, 38 D. A. Shanafelt ... SW NE NW 21-2n-2e
Flowed 660 bbl., 3,000 gal. acid, Devonian 3,425 ft., T.D. 3,516 ft.
Texas, 8 M. Tate ..... NE SW SW 31-2n-2e
Dry. Made ¼ bbl. oil and water, 500 gal. acid, Devonian 3,490-98 ft., T.D. 3,506 ft.
Texas, 23 E. Tate ..... SW NW SW 31-2n-2e
Flowed 495 bbl., 5,000 gal. acid, Devonian 3,479-85 ft.
Texas, 22 E. Tate ..... NW SE SW 31-2n-2e
Flowed 606 bbl., 5,000 gal. acid, Devonian 3,467-93 ft.
Texas, 28 W. Stroup ..... SE SW NW 31-2n-2e
Flowed 782 bbl., 5,000 gal. acid, Devonian 3,421 ft. and 3,438-51 ft., T.D. 3,472 ft.
Texas, 23 W. Stroup ..... NW SE NW 31-2n-2e
Flowed 300 bbl., McClosky 1,987-8, second porosity 2,079-81 water, T.D. 2,310 ft.
Texas, 22 Stonecipher ..... SW SW SE 32-2n-2e
80 bbl., 8,500 gal. acid, McClosky 1,963-90 ft., Salem 2,181 ft., T.D. 2,390 ft., P.B. to 2,380 ft.
Texas, 23 Stonecipher ..... SE SE SW 32-2n-2e
172 bbl., 5,000 gal. acid, McClosky 1,979-83, 2,035-37 and 2,048-53 ft., Salem 2,163 ft., T.D. 2,418 ft., P.B. to 2,323 ft.
Texas, 26 M. Williams ..... SW SE SW 32-2n-2e
Pumped 148 bbl., 5,000 gal. acid, McClosky 1,915-22, 1,930-37 and 1,998 ft., Salem 2,102 ft., T.D. 2,310 ft.
Texas, 9 Lazaretti ..... SW SW SW 33-2n-2e
Flowed 306 bbl., 4,000 gal. acid, McClosky 2,018 ft., Salem 2,240 ft., T.D. 2,385 ft., P.B. to 2,376 ft.
Texas, 62 City of Centralia ..... SW SE SW 32-2n-2e
Pumped 100 bbl., 30-qt. shot, 1,835-65 ft., Benoist 1,807 ft., Aux Vases 1,850 ft., T.D. 1,865 ft.
Texas 54 City of Centralia ..... SW NE NE 5-1n-2e
Flowed 70 bbl., 5,000 gal. acid, T.D. 4,513 ft.
Texas, 55 City of Centralia ..... SW NE NE 5-1n-2e
Flowed 204 bbl., 5,000 gal. acid, T.D. 3,488 ft.
Texas 11, Corbin ..... NW NW NW 5-1n-2e
Flowed 266 bbl., natural, McClosky 1,883 ft., Salem 2,129 ft., T.D. 2,178 ft.
Texas, 34 O. Johnson ..... NW SW SW 5-1n-2e
Flowed 349 bbl., 5,000 gal. acid, Devonian 3,313 ft., T.D. 3,410 ft.
Texas, 2 Johnson-Hankins ..... NE SW SW 5-1n-2e
Flowed 375 bbl., 5,000 gal. acid, Devonian 3,405-19 ft., T.D. 3,424 ft.
Texas, 2 Richardson ..... S½ N½ SW 5-1n-2e
Flowed 444 bbl. in 18 hr., 5,000 gal. acid, Devonian 3,395-3,415 ft.
Texas, 10 Bundy ..... SW SW NE 6-1n-2e
Gas-input well. Aux Vases 1,842 ft., Benoist 1,798 ft., T.D. 1,852 ft.
Texas, 12 C. Bundy ..... W½ SW NE 6-1n-2e
Flowed 406 bbl., 5,000 gal. acid, Devonian 3,414-44 ft., T.D. 3,456 ft.
Texas, 32 O. Johnson ..... NW SE SE 6-1n-2e
Flowed 250 bbl., 5,000 gal. acid, Devonian 3,380-85 ft., T.D. 3,395 ft.
Texas, 33 O. Johnson ..... NE SE SE 6-1n-2e
Flowed 244 bbl., 5,000 gal. acid, Devonian 3,375-80 ft., T.D. 3,393 ft.
Texas, 9 N. Carr B ..... SE NE NE 7-1n-2e
Flowed 289 bbl., 5,000 gal. acid, Devonian 3,397-3,413 ft., T.D. 3,417 ft.
Texas, 8 N. Carr B ..... SW NE NE 7-1n-2e
Flowed 305 bbl., 5,000 gal. acid, Devonian 3,386-98 ft., T.D. 3,420 ft.
Texas, 7 A. Richardson ..... SW NW NE 7-1n-2e
Flowed 1,279 bbl., 5,000 gal. acid, Devonian 3,375-3,439 ft.
Texas, 9 W. Carr C ..... SW NW NW 8-1n-2e
Flowed 700 bbl., 5,000 gal. acid, Devonian 3,374-3,436 ft.
Texas, 10 W. Carr C ..... SW NE NW 8-1n-2e
Flowed 400 bbl., 5,000 gal. acid.
Texas, 67 City of Centralia ..... NW NE NW 9-1n-2e
Pumped 175 bbl., 10-qt. shot, 1,911-21 ft., Benoist 1,848 ft., T.D. 1,921 ft.

Marion County

Harvey, 12 Kagg ..... NW SE SE 33-3n-2e
Flowed 400 bbl., Devonian 3,535-45 ft., T.D. 3,507 ft.

Hamilton County

Exchange, 1 Friel A ..... NW NE SE 34-5s-6e
Pumped 500 bbl. oil and 55 bbl. water, Benoist, T.D. 2,969 ft., P.B. to 2,966 ft.
Kingwood, 1 Morris ..... SE SE NE 34-5s-6e
Pumped 353 bbl., Benoist 2,946 ft., T.D. 3,299 ft., P.B. to 3,120 ft.

Monroe County

Cummings, 2 Bayer ..... SE SW SE 19-1s-10w
Dry. Salem 155 ft., Devonian 624 ft., Maquoketa 653 ft., Kimmswick 793 ft., Trenton 886 ft., Platteville 947 ft., Joachim 1,100 ft., St. Peter 1,343 ft., Powell 1,407 ft., Cotter 1,440 ft., Roubidoux 1,810 ft., T.D. 2,270 ft.

Montgomery County

Brown & Houseman, 1 Haynes .. SE NW SW 31-11n-5w
Dry. T.D. 625 ft.
Bahler Inv., 1 Street ..... NW NW SE 31-11n-5w
Pumped 45 bbl., Pottsville, 610-16 ft.
Grant & Thorpe, 1 Ben Wood .. SW NW NW 32-11n-5w
Dry. Show oil 600-3 ft., H.F.W. 650 ft., T.D. 655 ft.

Perry County

Blankenship, 1 City Park ..... NE NE SE 13-5s-3w
Dry. Elev. 412 ft., Devonian 2,852 ft., T.D. 2,933 ft.
Robinson, 1 Garner ..... NE NW SE 14-5s-3w
Dry. Glen Dean 1,075 ft., Renault 1,542 ft., Aux Vases 1,555 ft., Fredonia 1,703 ft.

Richland County

Pure, 1 E. Bauman ..... E½ SE NE 12-4n-9e
Pumped 178 bbl., 70 per cent salt water, Ste. Genevieve 2,889 ft., saturated sand 2,636-40 ft., show oil 2,889-95 ft., pay 2,917-20 and 2,923-28 ft., acid, T.D. 2,955 ft.

St. Clair County

Sklar, 34 M. Ozroff ..... NE NE SE 28-1n-10w
Pumped 95 bbl. oil and 200 bbl. water, Trenton 435-500 ft.
Skye & Benson, 1 Mussett ..... SE NW NE 28-1n-10w
Pumped 40 bbl. oil and 20 bbl. water, 120-qt. shot, Trenton 475-525 ft.

Shaffer, 3 O. G. Mueller ..... SW NW SW 34-1n-10w
Pumped 10 bbl. oil and 300 bbl. water, 1,000 gal. acid, Trenton 640-90 ft.

Wabash County

Finley, 2 Guisemete ..... NE SW SW 3-1n-13w
Dry, Menard 1,880 ft., McClosky 2,697-2,701 ft., show oil, T.D. 2,761 ft.
Renfro, 1 Zimmerman ..... SW SE SE 36-1n-13w
Abandoned location.
Longhorn, 12 Heil ..... SW SW SW 7-3s-13w
Pumped 50 bbl. oil and 5 bbl. water, McClosky 2,870-76 ft., T.D. 2,884 ft.

Wayne County

Ollwell, 2 W. S. Lawrence ..... SE SW SE 34-1s-7e
Pumped 30 bbl., McClosky 3,243-52 ft., T.D. 3,267 ft.
Weinert, 8 McPherson ..... W½ SW NW 3-2s-7e
Flowed 360 bbl., natural, McClosky 3,206-26 and 3,232-40 ft., T.D. 3,250 ft.
Scott, 2 Flanders ..... NW NW NE 3-2s-7e
Abandoned location.
Scott, 1 Cornick ..... NE SW SW 4-2s-7e
Pumped, estimated 375 bbl. oil and 500 bbl. water, McClosky 3,286-91 ft., flowed 70 bbl. in 6 hr. and died. T.D. 3,308 ft.

Washington County

Gulf, 3 Stanton ..... NE NW NW 26-1s1w
Pumped 300 bbl. and 10 bbl. water, Benoist 1,550-55 ft.
Magnolia, 1 O. Rahn ..... SE SW NW 23-1s-1w
Pumped 365 bbl., Benoist 1,540-50 ft.

White County

Ladas, 1 Kershaw ..... SE SE SE 3-4s-9e
Dry. Was Chicago Synd. Base Pennsylvanian 2,220 ft., Menard 2,557 ft., Cypress 3,035 ft., Benoist 3,189 ft., Ste. Genevieve 3,360 ft., T.D. 3,500 ft.
Pure, 2 Calvin A ..... SE SE NW 9-4s-14w
Pumped 40 bbl. oil and 6 bbl. water, Paint Creek 2,625-47 ft.
Superior, 3 Filton ..... SW NE NE 27-4s-14w
Pumped 28 bbl., Tar Springs 2,191-2,202 ft., water in Waltersburg at 2,132-70 ft., T.D. 2,203 ft.
Sun, 5 Greathouse ..... NE NW NW 4-5s-14w
Swabbed 75 bbl., 6,000 gal. acid, Ste. Genevieve 2,862 ft., T.D. 2,914 ft.
Eason, 1 Rebstock ..... SE SE SW 11-6s-9e
Pumped 87 bbl., Waltersburg 2,261 ft., T.D. 2,271 ft.

ILLINOIS WILDCAT OPERATIONS

Bond County

In the newly discovered Woburn pool, National Petroleum Corp. has four wells drilling in addition to the discovery well. Of these, No. 2 Sindler Investment, 495 ft. from north and east lines, NW NW 10-6n-2w, is swabbing from the Benoist topped at 1,004 ft. Magnolia, 1 J. Elam, SW SW SW 3-6n-2w, is drilling plugs at 1,040 ft., with the top of the Benoist at 1,023 ft., and Magnolia, 1 W. H. Griggs, NE NE NE 9-6n-2w, pumped 3 bbl. oil and 2 bbl. water per hour after a 30-qt. shot. This well is testing.

Bureau County

F. E. Webb, 1 Abrams.....
150 ft. from N and 450 ft. from W, NE NE 24-16n-8w
Rainbow at 501 ft., drilling ahead.

Clinton County

Centralia's two Trenton tests are still attracting attention as Ames, 2 Hicks, SW NE SE 12-1n-1w, swabbed 225 bbl. and is still testing. Barton, 1 Storer, SW NW NE 13-1n-1e, is drilling ahead at 3,184 ft., with about 1,000 ft. to go.

Crawford County

Bell Bros., 1 Hersey.....NE SE NE 1-5n-13w
Saturated McClosky 1,416-27 ft., on D.S. test, no oil, drilling 1,500 ft.

Franklin County

E. S. Adkins, 1 Old Ben Coal....NE SE SE 14-7s-3e
Elev. 416 ft., Cypress 2,504 ft., Bethel 2,780 ft., Aux Vases 2,822 ft., Ste. Genevieve 2,885 ft., McClosky 2,996-3,021 ft., testing trace of oil and water.

Fulton County

Lee Twp. Oil Co., 1 Frederick....NE SE NW 10-7n-13
H.F.W. Niagaran 703-810 ft., S.D.

Hamilton County

Texas, 1 Adams .....N½ NE NW 8-4s-7e
Menard 2,480 ft., Tar Springs 2,610 ft., Cypress 2,985 ft., Benoist 3,158 ft., Ste. Genevieve 3,342 ft., drilling 3,400 ft.
Lain, 1 Hood.....SE SW SW 34-5s-6e
Menard 2,255 ft., Cypress 2,745 ft., drilling 2,890 ft.

Jasper County

Johnson, 1 Mendenhall.....SW SW SE 17-8n-10e
Old T.D. 2,062 ft., Fredonia 2,532 ft., show oil 2,563-70 ft., low permeability, saturated lime 2,598-2,607 ft., running casing.

Macoupin County

Smith, 1 Klein .....SE NW NE SE 7-9n-7w
Pottsville 545 ft., drilling 575 ft.

Montgomery County

Brown, 1 Lipe.....SW SW SE 28-10n-3w
Elev. 650 ft., Devonian 1,950 ft.
Randall & Witt, 2 Street.....N½ NE SE 31-11n-5w
Kinderhook 1,605 ft., Chattanooga 1,698 ft., Devonian 1,784 ft., drilling 1,805 ft.

Wabash County

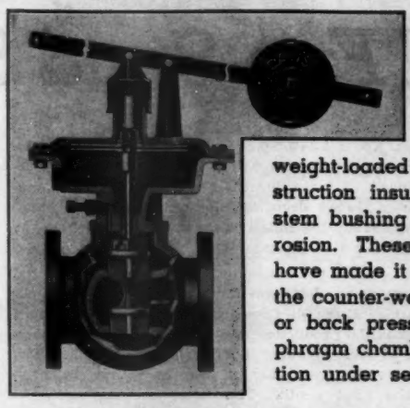
W. E. Hupp, 1 Milligan.....NW NW SE 3-1n-13w
Swabbed 13 bbl. per hr. for 12 hr., 3,000 gal. acid, show water, testing, McClosky 2,714-20 ft., T.D. 2,724 ft.

Washington County

Gass, 1 Kasten.....NW NW NE 13-1s-2w
Base Penn. 1,014 ft., Glen Dean 1,179 ft., Cypress 1,348 ft., Benoist 1,536 ft., S.D. 1,547 ft.

(Continued on Page 90)

FIELD REGULATORS FOR GAS GATHERING SYSTEMS



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No. 330 W

For complete information about the Davis line or gas regulating valves get our Bulletin G 1.

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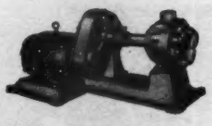

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CEDAR FALLS, IOWA

By

NEIL WILLIAMS

Jackson County Well Finds Good Frio Sand Showings

HOUSTON, Tex., Aug. 19.—Barnsdall, 1 Pritchett, a wildcat located about 6 miles north of La-Ward in the A. M. Clare Survey, Jackson County, was holding the attention of Gulf Coast operators as it cores ahead after logging encouraging showings in the top of the Frio section. Top of the sand section was logged at approximately 5,204 ft., and sand with an oil odor was cored at intervals from 5,283-93 ft. Two drill-stem tests were attempted at 5,232-44 ft., but the tests were failures, and the company decided to drill ahead after making an electrical survey.

Magnolia, 98-A West, a deep test located in the West Ranch field, Jackson County, is waiting on orders after oil and salt water was swabbed through new perforations at 6,164-70 ft. The well was killed and retested after a previous test at 6,170-74 ft. recovered oil and salt water. The sand section logged at 6,158-77 ft. is a new horizon for the field, being several hundred feet deeper than the 5,700-ft. horizon which is the deepest of three proven sands.

Salt Dome Oil Corp., 1 Pool, completed the previous week as a dry-gas well to open the first production on the Lissie prospect, Wharton County, is now classified as a distillate well, as a 24-hour test through a 5/32-in. choke tested 24 bbl. of distillate and 850,000 cu. ft. of gas. Tubing pressure was 2,000 lb., and casing pressure 2,250 lb. The well is producing through perforated casing 6,711-34 ft., having been plugged back from a total depth of 10,110 ft.

Humble, 1 Flewellen, a deep test located in the North Cotton Lake field, Chambers County, was abandoned at a total depth of 8,580 ft. The Frio formation was topped at 6,443 ft., and the Vicksburg at 7,940 ft.

Galveston Bay Activity

Galveston Bay which is receiving an extensive drilling campaign, gained a new location as Humble Oil & Refining Co. staked location for No. 2-A State, located 466 ft. from the northeast line and 466 ft. from the northwest line of Section 246. The well is situated approximately 1,200 ft. southeast of the company's No. 1-A-247 State, which is testing through perforated casing at 9,043-56 ft. The company is scheduled to move in material for 1-C-45 State, another projected deep test located on Fishers Reef, approximately 1½ miles southeast of Standard Oil Co. of Texas et al, 1-66 State, which is preparing to spud.

The deep sand flanking the north side of the Fannett dome, Jefferson County, continues to be extended as Gulf Oil Corp. completed No. 6 Bordages for an initial production of 832 bbl. per day through a ¼-in. choke. Working pressure on the tubing was 1,475 lb. Sand showing oil was cored at 8,144-8,200 ft., the total depth. The same company's No. 9 Bordages, east of production, is bottomed in salt at 8,090 ft. with 5½-in. casing cemented at 7,933 ft. to test sand at 7,822-63 ft. which was logged by an electrical survey and confirmed by sidewall cores.

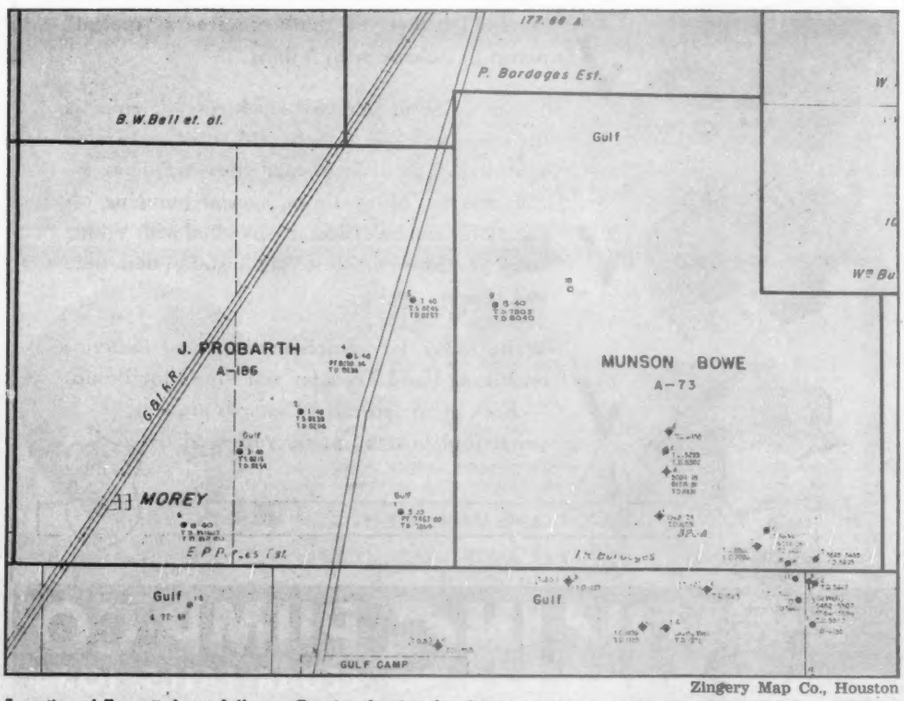
Jack Frazier, 4 Griffith, a wildcat located in the Mount Houston area, Harris County, attracted some attention as the result of a 4-minute drill-stem test at 3,463-86 ft., which tested 170 lb. working pressure and recovered 60 ft. of gas-cut drilling mud. The well is coring ahead.

Chocolate Bayou Outpost

Phillips Petroleum Co. is scheduled to move in material to the Chocolate Bayou field, Brazoria County, for No. 1 Triangle Development Co., located about 1 mile northeast of No. 1 E. W. K. Andrau which was completed this year as a distillate producer at 11,409-12 ft. The location is also about 2 miles due north of McCarthy & Plummer, 1 Houston Farm Development Co., the discovery well, which is flowing distillate from sand at 9,865-75 ft.

Christian-Carpenter Drilling, 1 J. J. Sweeney, about 1 mile due east of the discovery well of the Ogburn field, Harris County, is bottomed at 7,010 ft. where it is shut down after making an electrical survey. The well ran structurally lower than the discovery and no favorable showings have been reported.

Hogg Bros., 12 Hogg, an outpost well on the northeast edge of the West Columbia field, Brazoria County, is preparing to test the 5,700-ft. sand horizon after several attempts to open production from a new sand failed. The tests were made at intervals from 5,900-6,600 ft., and all recovered salt water.



Zingery Map Co., Houston

A section of Fannett dome, Jefferson County, showing development trend on northwest. Scale: 1 in. = 1,600 ft.

TEXAS GULF COAST COMPLETIONS

Brazoria County

Danbury field: Humble, 3 Bassett Blakely, 8,058 ft., dry.
Manvel field: Texas, 5-B Way, sand 5,696-5,704 ft., 454 bbl., ¼-in. choke.
West Columbia field: Gulf, 2 Mays, sand 5,682-93 ft., 146 bbl., ⅛-in. choke.
Texas, 95 Hogg, sand 3,168-3,201 ft., 372 bbl., ¼-in. choke.

Chambers County

Anahuac field: Magnolia, 1 Porter, 7,132 ft., dry.
Cotton Lake field: Humble, 1 Flewellen, 8,580 ft., dry.

Fort Bend County

Thompson field: Quintana, 7-B Wolters, perf. casing 5,430-38 ft., 194 bbl., ⅛-in. choke.

Harris County

Humble field: A. W. Crosby, 19 Brazos Oil Co., 1,916 ft., 120 bbl., pumping.
Tomball field: Humble, 2-C Juergens, sand 5,569-80 ft., 255 bbl., ¼-in. choke.

Jackson County

Lolita field: Humble, 2-B L. Ranch, sand 5,929-39 ft., 546 bbl., ¼-in. choke.
Magnolia, 2 Mitchell, sand 5,926-29 ft., 90 bbl., 12 hr., 7/64-in. choke.
Wellington, 4 L. Ranch, perf. casing 5,936-40 ft., 16 bbl., 3 hr., ⅛-in. choke.
West Ranch field: Magnolia, 88-A West, perf. casing 5,764-72 ft., 653 bbl., ¼-in. choke.
Magnolia, 97-A West, perf. casing 5,568-78 ft., 468 bbl., ¼-in. choke.

Jefferson County

Clam Lake field: Shell, 11 McFaddin, sand 5,907-41 ft., 218 bbl., ½-in. choke.
Fannett field: Gulf, 6 Bordages, sand 8,190-8,220 ft., 832 bbl., ¼-in. choke.
South China field: Titanic, 3-A Broussard, perf. casing 7,928-33 ft., 220 bbl., ¼-in. choke.

Tyler County

Joe's Lake field: Republic, 40 Hurd, sand 7,607-7,710 ft., 446 bbl., ¼-in. choke.

Wharton County

Withers field: Texas, 20 Broussard, top sand 5,498 ft., T.D. 5,544 ft., 106 bbl., ½-in. choke.
Texas, 47-B Pierce, sand 5,353-70 ft., 96 bbl., ⅛-in. choke.

TEXAS GULF COAST WILDCATS

Austin County

Humble, 17-Y Woodley, deep test, Raccoon Bend field. Drilling shale 7,179 ft.

Brazoria County

Rowan, 2 Hubbard, Rowan field. Drilling shale 7,229 ft.

Chambers County

Humble, 1-C-45 State, Galveston Bay. First report. Loc.
Humble, 2-A-246 State, Galveston Bay. Rigging up.
Standard Oil Co. of Texas, 13-66 State. Driving piling.
Sun, 3 Hoffman, Seabreeze field. T.D. 8,470 ft., 5½-in. casing on bottom.

Galveston County

Sun, 4 Cade, Caplen field. T.D. 7,578 ft., 5½-in. casing on bottom.
Continental, 1 Davis, M. Muldoon Survey. Rigging up.
Texas, 1 Kainer, J. Brown Survey. Drilling shale and lime 5,570 ft.

Grimes County

Laura C. Oil, 1 Hetmaniac, A. Thomas Survey. T.D. 5,750 ft., ran electrical survey.

Harris County

J. W. Frazier, 4 Griffith, Mount Houston area, Adam Smith Survey. Tested 170 lb. working pressure, recovered 60 ft. gas-cut mud on 4-minute drill-stem test 3,463-86 ft.
Humble, 1 Furr, S. Singleton Survey. Drilling shale 7,650 ft.
Christian-Carpenter Drilling, 1 Sweeny. T.D. 7,010 ft., ran electrical survey.

Jackson County

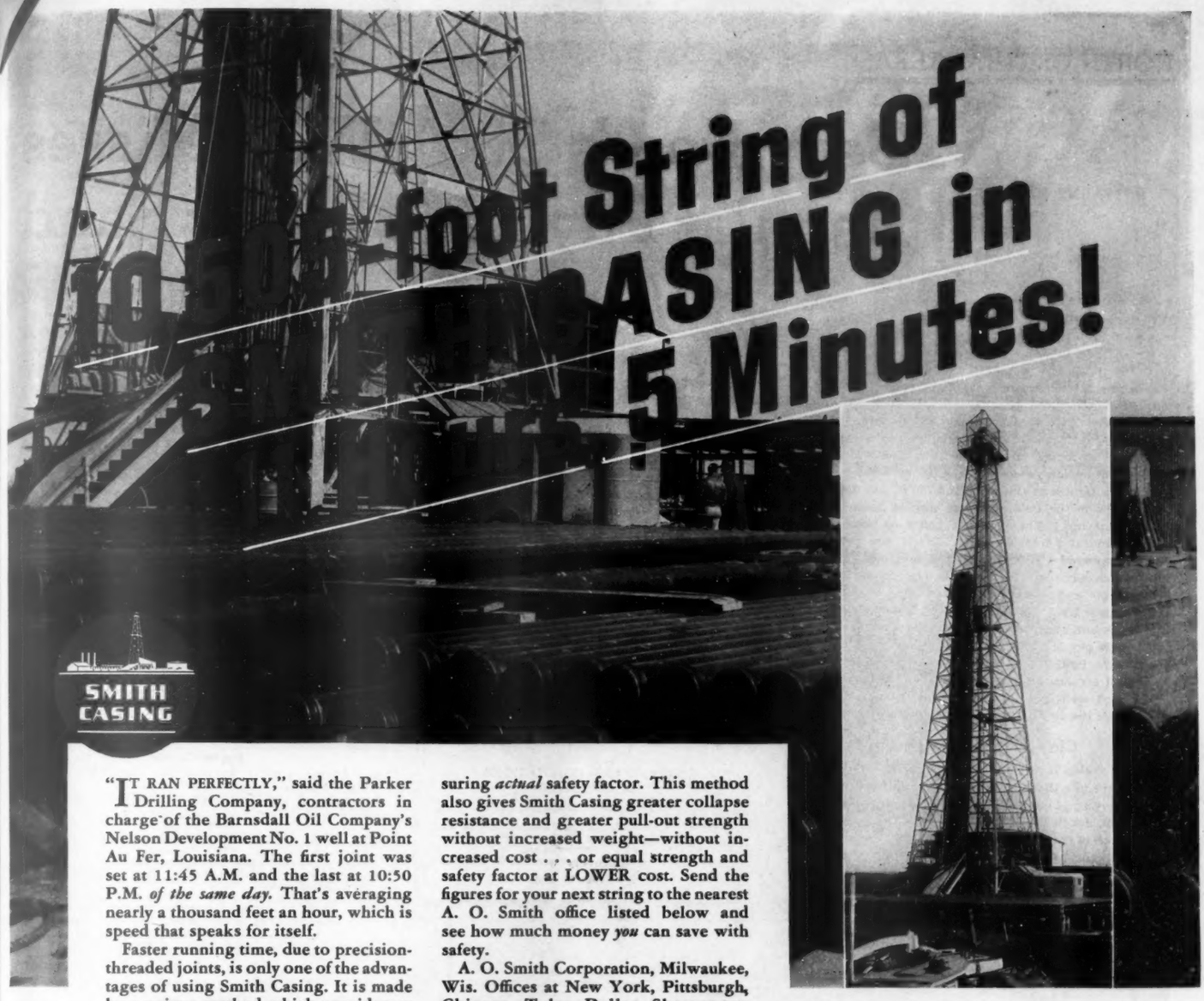
Barnsdall, 1 Pritchett, A. N. Clare Survey. Cored sand oil show interval 5,204-83 ft., drilling ahead after running electrical survey.
Stanolind, 1 American Life Realty Co., R. Grimes Survey. Drilling shale and lime 7,350 ft.

San Jacinto County

Harrison & Abercrombie, 1 Sun Oil Co., Shepherd area, W. Hays Survey. Drilling shale and lime 7,167 ft.

Washington County

O. S. Knisely, 1 T. H. Calhoun. S.D. 1,947 ft.



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"IT RAN PERFECTLY," said the Parker Drilling Company, contractors in charge of the Barnsdall Oil Company's Nelson Development No. 1 well at Point Au Fer, Louisiana. The first joint was set at 11:45 A.M. and the last at 10:50 P.M. *of the same day.* That's averaging nearly a thousand feet an hour, which is speed that speaks for itself.

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Smith Casing used in the Barnsdall Oil Company well at Point Au Fer, Louisiana was 8⅝" T & C (short coupling) *High Yield* grade.

489 feet of 43-pound casing;
1015 feet of 38-pound casing;
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By
R. MARNE SANFORD

Seay Pool's Sixth Well Misses Regular Pay, Hits Lower Sand

WICHITA FALLS, Tex., Aug. 19.—The two most active counties in the Fort Worth basin development campaign, Montague and Clay, took the lead during the past week as a new and deeper pay zone was discovered in the Seay field of Montague County and a new field was in prospect for western Clay County.

In the Seay field of extreme western Montague County, Fain-McGaha, 1 Spring, Section 33, Block 4, H.&T.C. Survey, a northwest offset to Omohundro's discovery well, was preparing to complete in a new and deeper zone of saturation drilled from 5,789 to 5,794 ft. The test was a failure in the regular 5,700-ft. pay found at other wells in the field, and was carried deeper as an exploratory hole. The test was being deepened with spudder and at a total depth of 5,794 ft. the well blew out and sprayed oil into the pits through a 3-in. flow line. Tools were still in the hole. Operators cut the drilling line and dropped the tools into the hole and the well was then shut in. The well is being killed so that work can start toward recovering the tools.

The new pay is about 95 ft. lower than the discovery zone in the field but is believed to be, as is the 5,700-ft. pay, a section of conglomerate of Bend age. This is the first well in the six-well field to miss the pay, thus it was the first to be drilled to the deeper levels.

Clay County Prospect

A new Caddo lime field was in prospect at the close of the week for the area southeast of the town of Halsell in western Clay County. It is Horton & Wiggins, 1 Howard, Block 31, T. J. Belcher Survey, about 3½ miles south of the Halsell field. Saturation in the Caddo lime was drilled from 5,481 to 5,484 ft. and a core from this point to 5,494 ft. showed some recovery, indicating to the operators that it was also a saturated section.

The wildcat has a contract depth of 5,600 ft. and will be completed to that depth before testing the Caddo lime show. It was last reported drilling ahead below 5,530 ft.

Young County Discovery

A new field discovery for Young County in the area east of the town of Graham is A. T. Strong, 1 Craig, E. H. Ross Survey. The well encountered saturation in the Marble Falls lime from 4,239-42 ft., making 810 bbl. of oil into storage in 6 hours. The well showed for a producer in the Caddo lime drilled from 3,816-83 ft. With intentions of testing this upper pay a twin well has been staked. Indicating immediate development of the field, the operator has staked a north offset as his No. 1 Allen, N. Lynch Survey, and a west offset to this location as his No. 2 Allen, same survey. Another location in this area is No. 2 Craig which is a west offset to the discovery well.

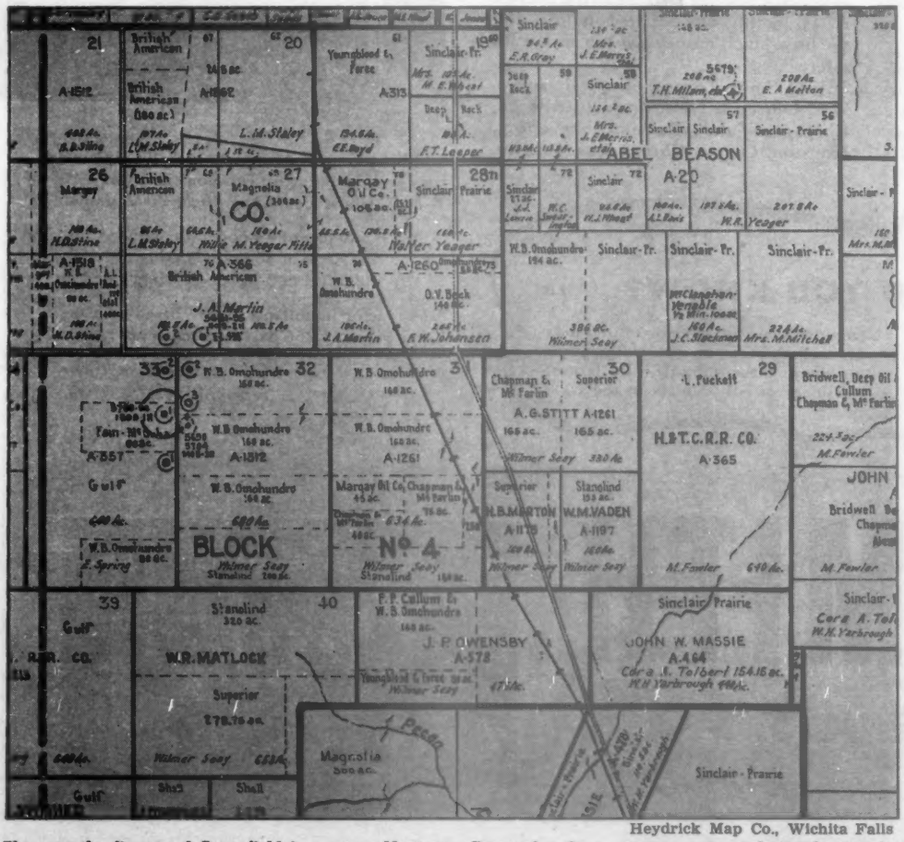
New Wildcats

In Baylor County, Texas Co. has spudded its No. 1 Mary Clements, Section 3145, T.E.&L. Survey, a half mile north of the Baylor and Throckmorton County line. The test will be carried to the deep levels and is about 5 miles west of the 1,000-ft. producing Portwood field.

NORTH TEXAS COMPLETIONS
(24-hour gages)

Archer County

Holliday field: Ligon, 8 White, 10 bbl., 464-80 ft.
Ligon, 5 Shile, 38 bbl., 961-70 ft.
Silkes, 3 Martin, abandoned location.
Hull-Silk field: Thurmond & Lipscomb, 8 Wilson, 1,130 bbl., 3,952-75 ft.



Heydrick Map Co., Wichita Falls

The recently discovered Seay field in western Montague County has been given a new producing horizon by a test which failed to pick up the regular producing level of the field

K.M.A. field: Thweatt & Gray, 1 Ferguson, 121 bbl., 3,771-3,905 ft.

Clay County

Thornberry field: Costley, 9 Taylor. Dry, T.D. 1,140 ft.
Johnson, 1 Taylor. Dry, T.D. 1,053 ft.

Cooke County

Wildcat: Hancock, 1 Alexander. Dry, T.D. 2,582 ft.

Jack County

Grassroots field: Smith, 1 Power, 20 bbl., 388-96 ft.

Montague County

Bonita field: Sinclair Prairie, 1 Langford. Dry, T.D. 5,500 ft.
Rogers & Rogers field: Stanolind, 1 Hill, 82 bbl., 4,572-98 ft.

Wichita County

K.M.A. field: Blanco & Buchanan, 6 Thom, 782 bbl., 3,773-3,830 ft.
Hammon, Hanlon & Buchanan, 24 Fassett & Tuttle, 672 bbl., 3,905-57 ft.
Electra field: Continental, 31 Waggoner, 35 bbl., 1,373-86 ft.

Wilbarger County

K.M.A. field: Woods, 7 Womack, 798 bbl., 3,955-95 ft.

Young County

Graham field: Rathke Oil, 3 Jeffery, 150 bbl. oil and 12,000,000 cu. ft. gas, 3,977-4,654 ft.

NORTH TEXAS WILDCATS

Archer County

Paul Steed, 1 Prideaux, Sec. 1807, T.E.&L. Sur. T.D. 4,313 ft., S.D. and may abandon.
Clark, 1 Goldsmith, Blk. 6, S.A.R. Sur. Fishing drill pipe 4,974 ft.

Baylor County

Roy Carter, 1 S. G. Farmer, Sec. 3126, T.E.&L. Sur. S.D. 2,001 ft.
Texas Co., 1 Clements, Sec. 3145, T.E.&L. Sur. Spudding.

Clay County

L. T. Burns, 1 Calloway, Lot 9, Hopkins County School Lands Sur., Abst. 176. Present T.D. 5,356 ft., new contract depth 6,000 ft., rigging up.
Frabor-Hodges, 2 Kinder, Lot 17, Blk. 2, Clark & Plumb Sur. First report.
Horton & Wiggins, 1 W. J. Howard, Blk. 31, T. J. Belcher Sur. Drilled saturation 5,460-81 ft., drill-stem test showed 40 ft. oil-cut mud, will drill deeper.
Roberts, Lynch & Jones, 1 Edwards, Blk. 40, Madison County School Lands Sur.; 6,500-ft. test. Drilling 2,631 ft.
Carlos Wagner, 1 Thaston, Sec. 4, T.&N.O. Sur.; 5,000-ft. test. First report.

Denton County

Amon G. Carter, 1 W. P. and A. P. Allen, S. Westbrook Sur. S.D. 4,000 ft.
Harvey Bros., 1 Knox, R. Howard Sur., Abst. 542. Old T.D. 1,357 ft., show oil 1,467-93 ft., set 6⅝-in. at 1,465 ft.

Hardeman County

Norris & Gilbert, 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur. Show oil in lime 3,810 ft., drill pipe stuck 3,867 ft.

Jack County

R. A. Conkling, 1 M. Hoofle, A. James Sur., Abst. 318, 3 miles south Antelope; 3,500-ft. test. S.D. 2,320 ft.
Continental Oil, 1 Robertson, M. J. Swan Sur., Abst. 1650. Drilling 2,164 ft.
Rathke Oil, 1 Moseley, J. Harrison Sur., Abst. 259. 12½-in. set at 894 ft., 10-in. set at 1,218 ft., drilling 1,270 ft.

Montague County

Walter Gant, 1 Will Laird, R. T. Millard Sur., Abst. 470, 7 miles west of Sunset, slight show oil 4,857-77 ft., cored conglomerate, show oil 5,650-61 ft., drilling 6,320 ft.
Hults & Owens, 1 Tucker, NW cor. Sec. 2836, T.E.&L. Sur. Drilling 4,860 ft.
W. H. Peckham, 1 Dr. Lawson, N. Kimbro Sur., Abst. 405. S.D. 6,133 ft.
A. R. Dillard, 1 Holland, M. Montalba Sur. 10-in. set at 375 ft., drilling 2,740 ft.

Throckmorton County

Normandie Oil Corp., 1 Travis, Sec. 37, Travis C.S.L. Sur. Drilling 4,372 ft.

Wilbarger County

Herbert Oil Co., 1 S. B. Peters, Sec. 1, B.B.B.&C. Sur. Drilling 4,140 ft.

Wise County

Cranfield & Rogers, 1 McKay, Sec. 8, Falls County School Lands Sur.; 7,500-ft. test. Drilling 2,880 ft.

Young County

A. T. Strong, 1 Craig heirs, N. Lynch Sur., 6⅝-in. set at 3,840 ft., saturated lime at 4,225-40 ft., estimated 40 bbl. oil daily, perf. casing 3,985-91 ft., tested only salt water, will perf. from 3,546-48 ft.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Aug. 19.—Activity in the West Central Texas district is at a very low ebb, there being

less than the usual number of wildcats active throughout the area and not a great deal of field development being carried on.

Several new wildcats were listed for the district during the week, the majority being contracted only to shallow depths. On the Shackelford and Callahan County line but in Shackelford County, location has been made for W. F. Snebold, Fort Worth, 1 J. F. Dyer, 660 ft. from the north and west lines of Section 83, Block 12, T.&P. Survey.

In Fisher County and the second exploratory test to be located in as many weeks is General Crude Oil, 12 Flannigan, C W½ Section 200, B.B.B.&C. Survey. It is contracted to the deep levels.

A new wildcat for Jones County is Carl Shoults and associates, 1 A. Nobles, northwest corner 87-acre tract in the west part of the B. Trevino Survey. It will seek pay from the Swastika zone which is expected at about 2,300 ft.

In Coleman County L. J. Derrick has located his No. 1 Vance, Section 101, E.T.R.R. Survey. It is to be a 2,100-ft. test.

San Saba County, in the extreme southern part of the West Central Texas district, was given a new wildcat test by Three Widows Oil Co., 1 Minnie Ballard, location being staked 460 ft. from the north and west lines of southwest 160 acres of the H. Behrenoth Survey 506. It is projected to 2,000 ft.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Callahan County

Putnam field: Lewis Blosser, 2 Wylie. Dry, T.D. 335 ft. Trumbar Pet., 1 Finley. Dry, T.D. 695 ft.

Coleman County

Wildcat: Ringle & McCracken, 1 McCulloch. Dry, T.D. 670 ft.

Eastland County

Wildcat: Jones & Stasney, 1 McElreath, 110 bbl., 3,035 ft., T.D.

Jones County

Higgs field: N. H. Martin & Son, 2 Reynolds, 18 bbl., 1,831-41 ft.
Wildcats: Kadane-Griffith. 1 Spraberry, junked at 2,782 ft.
Mead, 1 Hicks, abandoned location.

Shackelford County

Albany field: Holder, 1 Leschber. Dry, T.D. 492 ft.
Mathews field: Merrick & Lamb, 1-D Mathews, 750,000 cu. ft. gas, 1,179 ft.
Sedwick field: Grossenbacher, 8 Hickman, 27 bbl., 700-04 ft.
Roark, 11 Hickman, 18 bbl., 689-95 ft.
Roark, 12 Hickman, 20 bbl., 658-66 ft.
Jackson field: Marthy Oil, 1 Dyer. Dry, T.D. 1,201 ft.
Ungren & Frazier, 2 Jackson, 29 bbl., 923-28 ft.
Miscellaneous: Fain-McGaha, 3 Morris, 60 bbl., 1,511-25 ft.

Taylor County

Anderson field: Macktex Oil, 2 High, 52 bbl., P.B. to 1,545 ft., T.D. 2,102 ft.

WILDCAT OPERATIONS

Brown County

F. Brittain, 1 G. R. McEnloe, 1,130 ft. NE, 300 ft. NW lines of J. Williams Sur. 33; 1,800-ft. test. S.D. 50 ft.

Callahan County

N. D. Gallagher, 1 E. Grisson, SE pt. Sec. 2, Blk. 8, S.P. Sur. S.D. 1,465 ft.

Comanche County

C. D. Lane, 1 H. W. Strout, 3,080 ft. from N, 2,200 ft. from E lines of E. D. Corbett Sur., Abst. 154. Drilling 2,195 ft.

Eastland County

Dabbs Oil, 1 Poe, Sec. 37, Blk. 3, H.&T.C. Sur. Drilling 1,000 ft.
L. M. White, 1 W. H. White, NW pt. White tract in H. Kendrick Sur., 10 miles S of Ranger. Drilling 340 ft.

Fisher County

F. A. Stephenson, 1 Maberry, SE SW Sec. 56, Blk. 1, H.T.&B. Sur.; 3,400-ft. test. First report.

Hamilton County

A. J. Caldwell, 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines of W. H. Crowder Sur. S.D. 3,010 ft.

Jones County

Best, 1 A. A. McDuff, 5,200 ft. S, 1,100 ft. E lines of J. J. Hughes Sur. 256. Set 6⅝-in. casing at 2,040 ft., drilling 2,110 ft.
Shoults, 1 Noble, B. Trevino Sur.; 2,300-ft. test. First report.

Palo Pinto County

Georgian, 1 J. K. Weldon, A. J. Smith Sur., Abst. 393; 2,500-ft. test. S.D. 1,000 ft.
Fred Guyer, 1 Dalton, Dalton Sur., Abst. 153; 1,400-ft. test. T.D. 1,840 ft., U.R. 8¼-in. csg.

Parker County

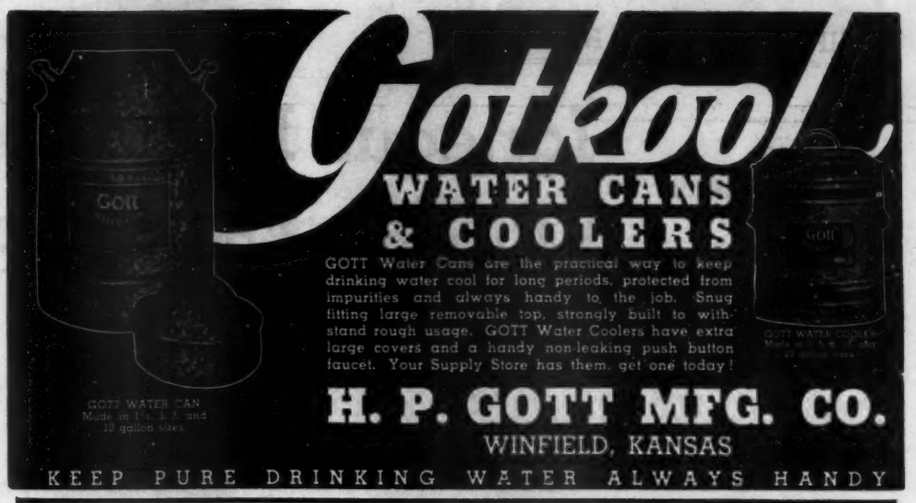
Brown & Gardner Bros., 1 Gilbert, T.&P. Sur., Abst. 1858. Csg. set 3,905 ft.; est. 500,000 cu. ft. gas and spray oil, slight show oil 4,405-15 ft., drilling 4,690 ft.
C. Leidecker and Wm. Holland, 1 J. A. Boyd, NE NE of S 100 ac. of A. J. Edwards Sur.; 4,500-ft. test. S.D. 2,410 ft.

Tarrant County

Hickey, 1 Baltzelle, NE cor. Wm. Scott Sur. Drilling 700 ft.

Taylor County

Borrells, 1 Young, SE Sec. 37, B.B.B.&C. Sur.; 1,800-ft. test. Drilling 300 ft.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Igneous Rocks Found Above Oil Sand at Inglewood

By
L. P. STOCKMAN

LOS ANGELES, Calif., Aug. 19.—California crude-oil production for the first 15 days of August has been averaging about 2,000 bbl. per day in excess of the state's production during the first 15 days of July but most of this may be eliminated before the end of the current month. Many California operators produce their allotment as early in the month as possible and then suspend operations during the last part of each month. For this reason crude-oil production sometimes exceeds 640,000 bbl. per day early in the month. Current daily production of leading California fields for the past week follows:

	Barrels
Wilmington	84,200
Midway-Sunset	59,250
Kettleman North Dome	47,025
Long Beach	44,425
Ventura Avenue	33,350
Coalinga	29,750
Huntington Beach	26,350
Santa Fe Springs	26,250
Montebello	18,250
Santa Maria Valley	17,225

LOS ANGELES BASIN

Two wells, No. 1 Lincoln of R. E. Havenstrite in the Newhall district, and No. 1 Sentous of R. R. Bush Oil Co. in the Inglewood district, received more than passing interest this week because both showed some promise. No. 1 Lincoln has not yet found the third zone but seems to be correlating very closely with other wells drilled in the general area. This wildcat, located in 16-4-17, is believed to have found top of the first zone at 6,036 ft. and top of the second zone at 6,411 ft. Present depth is 6,520 ft. and the top of the third zone that is expected to be found productive is expected to be cored around 6,700 ft. Several relatively thin streaks of coarse oil sand have been cored during the past 500 ft. Top of the Miocene has been placed at 5,755 ft. Standard Oil Co. has leased the 750-acre Sepulveda property north of No. 1 Lincoln. No. 1 Ferguson of Newhall-Potrero Oil Co. in 26-4-17, located a few miles southeast of No. 1 Lincoln, is almost 2,000 ft. lower structurally than the latter and therefore does not look any too promising. In the Aliso Canyon area which is also located in the Newhall-San Fernando quadrangle, Continental Oil Co. is rotating ahead in No. 2 Howell in 35-3-16 at 4,990 ft. in a gray sand. This well is still well above top of the Eocene which is expected at about 6,000 ft. The first well in this area proved to be a dud but it was far enough away to have no effect on No. 2 Howell.

No. 1 Sentous of R. R. Bush Oil Co., an outpost in the southwestern end of the Inglewood field of Los Angeles County, presents a problem that may not be solved for another week or 10 days. This well has run into so many formations not heretofore encountered in the Inglewood or other nearby fields that it is not clear what has occurred in the Miocene in this field. Certainly igneous rocks are not found in close proximity to oil sands but No. 1 Sentous has not only cored igneous rocks but has also cored a hard sandstone. The log of this outpost shows nodular shale at 8,280-8,335 ft., a soft shale and sand containing a coarse oil sand to 8,360 ft., igneous rock 8,360-95 ft., then oil sand grading to a hard shale at 8,395-8,439 ft. A hard sandstone formation found at 8,400 ft. has not yet been classified. This is the deepest well drilled in the Inglewood field up to the present and thus operators are watching developments to determine what may be expected inside the field when deep-zone development begins. This field, which is believed to contain several additional productive zones below present production, has been held back for several years as a conservation measure and as good business. Inglewood is one of several fields located en echelon along the Inglewood-Newport shear zone and it is logical to assume that it should have some of the characteristics of other fields along this line. All others without exception have one or more productive zones. Deepest production at Inglewood is in the very top of the Miocene.

LOS ANGELES BASIN COMPLETIONS

Huntington Beach Field

Pacific American, 7 H. B. 34-5s-11w
Pumped 25 bbl., 20.1-gravity, 60 per cent cut, T.D. 3,923 ft. Orange County.

Standard, 42 Bolsa Chica 34-5s-11w
Flowed 457 bbl., 22.9-gravity, 7 per cent cut, 375,000 cu. ft. gas, 38/64-in. bean, T.D. 4,783 ft. Orange County.

Long Beach Field

D. W. Elliott, 2 Ella 30-4s-12w
Pumped 26 bbl., 23-gravity, 8 per cent cut, T.D. 3,160 ft., P.B. 2,495 ft., reconditioned. Los Angeles County.

A. D. Mitchell, 1 Mauk 19-4s-12w
Pumped 95 bbl., 24.2-gravity, 2 per cent cut, T.D. 3,345 ft., reconditioned. Los Angeles County.

Richfield Field

Welco, 1 Richfield 33-3s-9w
Pumped 66 bbl., 26.1-gravity, 3.4 per cent cut, T.D. 4,830 ft., P.B. 4,700 ft. Orange County.

Seal Beach Field

Continental, 6 Bixby 11-5s-11w
Pumped 170 bbl., 24.1-gravity, 12 per cent cut, T.D. 4,775 ft., redrilled to 4,724 ft. Orange County.

Torrance Field

O. S. Oil Co., 1 Spring 30-4s-14w
Pumped 45 bbl., 17.2-gravity, 2.5 per cent cut, T.D. 3,747 ft., recompleted, Los Angeles County.

Zenith, 3 Torrance 23-4s-14w
Pumped 80 bbl., 15.1-gravity, 8 per cent cut, T.D. 3,527 ft., elev. 161 ft. Los Angeles County.

Wilmington Field

L. B. Oil Dev. Co., 15-W 3-5s-13w
Flowed 205 bbl., Ranger zone, 21.6-gravity, 5 per cent cut; 300 bbl., upper Terminal zone, 26.1-gravity, 5 per cent cut, 18/64-in. bean; 395 bbl., lower Terminal zone, 30.1-gravity, clean, 18/64-in. bean; 11¾-in. water string 2,580 ft.; 8⅝-in. casing landed at 3,957 ft., C.P. 3,105 ft., 3,655 ft., 3,830 ft. and perforated 2,573-2,945 ft., 3,105-3,290 ft., 3,310-3,547 ft., 3,655-3,760 ft., 3,830-70 ft., 3,900-57 ft.; 5½-in. hung 3,756 ft., packer 2,954 ft.; 2⅝-in. tubing 3,934 ft., packer 3,770 ft., T.D. 3,962 ft. Los Angeles County.

Louie-Elliott, 1 Harbor 33-4s-13w
Flowed 65 bbl., 16.6-gravity, 3 per cent cut, open line, T.D. 4,020 ft., Ranger zone. Los Angeles County.

U. P. R. R., 26-E 3-5s-13w
Flowed 240 bbl., 30.8-gravity, T.D. 4,000 ft., P.B. 3,790 ft., producing from lower Terminal zone. Los Angeles County.

LOS ANGELES BASIN WILDCATS

Aliso Canyon District

Continental, 2 Howell 35-3n-16w
T.D. 4,990 ft., gr. sd. drlg., spot coring; still above Eocene; previous wildcat, No. 1 Howell in 2-2n-16w, was abandoned at 4,260 ft. in Eocene; top of Eocene was cored at 4,010 ft.; Miocene was absent. Los Angeles County.

Dominguez District

Wood-Mellon, 1 Wood 31-3s-13w
T.D. 7,795 ft., P.B. 2,498 ft.; will whipstock and redrill to check zone at 3,143-4,170 ft. where some oil sand was recovered in sidewall samples, before abandoning; seventh and eighth Callender zones were barren of any sand; sixth Callender zone showed 14 ft. of oil sand at 6,808-22 ft. grading into gray water sand; located 1 mile west of Dominguez field in Los Angeles County.

Angle & Aregood, 1 Dominguez 31-3s-13w
Located at Main and Victoria Street between No. 1 Wood, and Dominguez field; status: Derrick up. Los Angeles County.

Inglewood District

Bush, 1 Sentous 17-2s-14w
T.D. 8,439 ft.; Nodular shale 8,280-8,335 ft.; soft formation showing oil on ditch 8,335-50 ft. and considerable gas pressure; formation past 100 ft. consisted of oil sand, sandy shale, and igneous rocks. Located in southwest end of Inglewood field in Los Angeles County.

Newhall District

Havenstrite, 1 Lincoln 16-4n-17w
T.D. 6,518 ft., drilling; top lower Pico 5,242 ft., top Miocene 5,750 ft.; appears to correlate about 450 ft. higher than San Francisco field discovered by Barnsdall Oil Co.; top first zone 6,036 ft.; streaks of oil sand 6,036-6,180 ft., shale body 6,180-6,290 ft.; believed in second San Francisco zone. Los Angeles County.

Newhall-Potrero, 1 Ferguson 26-4n-17w
Drilling ahead at 6,570 ft. in hard shale; appears to be correlating about 1,250 ft. lower than San Francisco field. Los Angeles County.

SAN JOAQUIN VALLEY

Superior Oil Co. has reached a critical point in No. 1 Riggs its westernmost well in the Rio Bravo field of Kern County because of the fishing job that developed during the current week. While coming out of the hole with bottom at 12,324 ft. the drill pipe stuck. The company made a cut at 8,565 ft. and left in the hole about 100 ft. of drill pipe, the drill collar, and bit at 8,740 ft. Because of its depth No. 1 Riggs has reached a turning point that may either lead to a resumption of drilling or abandonment. Superior would like to make another few hundred feet of hole because at its present depth it is questionable whether it could be considered a dud. The outlook for production has not been favorable for the past several weeks due to the well's failure to find the Rio Bravo and Vedder zones where they might normally be expected to be found. Top of the Olcese was logged at about 10,500 ft. and this indicated that the nose of the structure was plunging off at a rapid degree. There is no evidence of a fault between this well and nearest production although subsequent development may prove the existence of such a condition. The present status of No. 1 Riggs, as far as its depth and failure to find the Vedder zone is concerned, checks identically with the results shown by two seismograph surveys. If No. 1 Riggs is abandoned it is quite likely that the Riggs, Bohna, and Devine leases will be quit claimed simultaneously. Southeast of No. 1 Riggs, Superior Oil Co. is rotating ahead in the pay in No. 1 Mandell after cementing a string of 7⅝-in. casing above the top of the productive zone at 11,157 ft.

Greeley Field

General Petroleum Corp. has completed No. 1 Wallace in 1-29-25 at Greeley but the initial gage has not yet been taken. It looks good for about 2,000 bbl. per day from the Rio Bravo zone with bottom of the hole at 11,512 ft. This well is located out in the north end of the Greeley field where General Petroleum proved up the existence of deep production late last year. No. 1 Wallace was finished with a 6⅝-in. water string cemented at 11,302 ft. and 275 ft. of 4¾-in. liner including 205 ft. of perforated landed at 11,509 ft. Top of the productive Rio Bravo zone was cored at 11,320 ft.

Drilling operations have been reduced in the Greeley field but new locations staked and additional derricks in course of construction indicate that both Stanolind Oil Co. and General Petroleum Corp. will both proceed with additional drilling. The former recently spudded in No. 11-24 Kern County Land in 18-29-26 and has new rigs up for Nos. 12-11 and 12-12 Kern County Land in 7-29-26 out on the north front. General Petroleum has derrick standing for No. 2 Oughton and foundation in for No. 3 Oughton as well as a derrick in course of erection for No. 3 Sullivan all located in 12-29-25. General Petroleum's discovery of deep-zone production out on the north flank of the Greeley field was made on the Sullivan lease on which two producing wells have already been completed.

Coalinga District

One new well was completed in the Coalinga district of Fresno County this week but with eight incompleted wells making hole below 7,000 ft. it is quite probable that all of them may be finished and on production before the close of August. R. S. Lytle completed No. 88-18-F in 18-20-16 but actual gage has not yet been taken. It is a normal completion in the Southeast Coalinga field and should show an initial daily production well in excess of 2,000 bbl. No. 88-18-F was finished at 7,921 ft. after having topped the Gatchell zone at 7,717 ft. Next week Lytle has No. 84-18-F in 18-20-16 scheduled for completion as it is bottomed in the pay at present at 8,072 ft.

Cole's Levee—Tupman

Drilling operations in the Cole's Levee field of Kern County are at present limited to No. 10-F Kern County Land of Ohio Oil Co. in 11-31-25, and No. 20-7 Kern County Land of Standard Oil Co. in 9-31-25, but there does not appear to be any limitation on development work in the Tupman field which is located west and north of Cole's Levee. Richfield Oil Corp. is running 14 strings of tools in the Tupman field and has another group of derricks erected and locations staked

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St. Louis, Mo.	Banner Iron Works
St. Paul, Minn.	Valley Iron Works
London, Eng.	The International Meehanite Metal Co., Ltd.

for additional work. Richfield has completed 30 wells in the Tupman field to date and its budget calls for completion of 50 wells during 1940 and 50 more during 1941. The company is running ahead of schedule and consequently will complete its 100-well program for this field late next summer if it proceeds according to present plans. During the current week the company added two new wells to its list of producers in the Tupman field.

Wildcats

In the Buena Vista Hills section of the Midway-Sunset field of Kern County, Honolulu Oil Co. has reached a depth of 6,495 ft. in No. 25-P, a deep test that is being carried down to determine production possibilities of this anticline. It is generally agreed that this anticline should contain a deeper zone but the company may have to go to 8,000 ft. At this depth it is believed possible that the equivalent of the Stevens sand should be found and that at 11,000 ft. or thereabouts the Rio Bravo and Vedder zones should be logged.

Texas Co. has just spudded in No. 1 Everding in the Cantua Creek district of Fresno County but it will be another 60 days before this wildcat reaches the objective Domengine formation of Eocene age. Tide Water Associated Oil Co. is nearing the depth at which the Gatchell sand should be found in its wildcat located in 6-19-16 north of the Northeast Coalinga field and from now on the company will take frequent cores. Continental Oil Co. is rotating ahead in lower Temblor at 8,205 ft. in its wildcat in the Kreyenhagen district of Fresno County in 4-22-16 and still has another few thousand feet to go. It is believed that top of the Kreyenhagen should be found around 8,350 ft. and that there should be about 1,100 ft. of these rocks to drill through before reaching top of the objective Eocene. This wildcat is located in a district long regarded as potentially productive acreage but which has so far failed to respond. A number of wildcats have been drilled in this general area but none were close enough to Continental's wildcat to be of any consequence.

SAN JOAQUIN VALLEY COMPLETIONS

North Belridge Field

Belridge, 7-1 fee 1-28s-20e
Flowed 85 bbl., 48.9-gravity, 3 per cent cut, 6,327,000 cu. ft. of gas; 40/64-in. bean; pressure 650 to 1,050 lb.; T.D. 8,249 ft.; top Belridge sand 5,085 ft., U point 7,768 ft., V point 7,900 ft. Kern County.

Associated, 33-21 ..... 21-27s-20w
Flowed 1,104 bbl., 32.1-gravity, 1,425,000 cu. ft. of gas; two 1-in. beans; T.D. 8,525 ft.; elev. 696 ft. Kern County.

Greeley Field

Standard, 12-10 Kern County Land 7-29s-26e
Flowed 3,110 bbl., 34.1-gravity, 2,860,000 cu. ft. of gas; 39/64-in. bean; pressure 1,750 to 1,620 lb.; T.D. 11,510 ft., elev. 339 ft.; top of productive Vedder zone 11,352 ft. Kern County.

Rio Bravo Field

Union, 65-34 Kern County Land 34-28s-25e
Flowed 1,396 bbl., 39.6-gravity, 1,619,000 cu. ft. of gas; 24/64-in. bean; pressure 1,000/850 lb.; when bean cut to 8/64-in. pressure was 1,675/1,825 lb.; T.D. 11,475 ft.; elev. 338 ft.; top productive Rio Bravo zone 11,259 ft. Kern County.

Southeast Coalinga

Standard, 22-17-F fee 17-20s-16e
Flowed 2,992 bbl., 28.9-gravity, very clean, 1,176,000 cu. ft. of gas; 48/64-in. bean; pressure 540/800 lb.; T.D. 8,225 ft.; elev. 716 ft.; top Kreyenhagen 6,780 ft., top Glauconitic 7,890 ft., top Gatchell 8,027 ft.

Tupman Field

Richfield, 34-29-A Kern County Land 29-30s-25e
Flowed 658 bbl., 33.3-gravity, 1.8 per cent cut, 1,000,000 cu. ft. of gas; two 1¼-in. beans; T.D. 9,473 ft.; P.B. 9,385 ft.; 451 ft. of 5½-in. liner, perforated at 8,976-9,015 ft., 9,055-95 ft., 9,135-9,203 ft., 9,265-9,379 ft.; elev. 310 ft. Kern County.

Richfield, 14-33-A Kern County Land 33-30s-25e
Flowed 1,485 bbl., 32.7-gravity, 5 per cent cut, 1,550,000 cu. ft. gas; two 1¼-in. beans; T.D. 9,120 ft.; 685 ft. of 6⅝-in. liner, perforated at 8,695-8,849 ft., 8,890-9,115 ft.; elev. 310 ft.; drilled by Taft Well Drilling Co. Kern County.

Wasco Field

Standard, 5 Mushrush 7-27s-24e
Flowed 3,052 bbl., 37.2-gravity, 862,000 cu. ft. of gas; 34/64-in. bean; pressure 700/600 lb.; T.D. 13,130 ft.; 103 ft. of 4½-in. liner landed at 13,129 ft. and perforated 13,056-13,129 ft.; 13,101 ft. combination 2-in. and 2¼-in. tubing; elev. 283 ft.; top oil sand 13,072 ft.; base oil sand 13,100 ft., giving 28 ft. of oil sand. Kern County.

SAN JOAQUIN VALLEY WILDCATS

Kreyenhagen District

Continental, 1 Kreyenhagen 4-22s-16e
Drilling ahead at 8,205 ft. in lower Temblor. gray sand; top of Kreyenhagen expected around 8,300 ft.: expect 1,100 ft. of Kreyenhagen on top of Eocene; well is joint test of Continental, General Petroleum, Ohio, and Fullerton Oil Co. Fresno County.

Panoche Creek District

Jergins, 1 Cheney Ranch 29-14s-13e
T.D. 9,225 ft., plugged and redrilled to 7,350 ft.; acid treatment failed; lost bit in liner; reacidized, ran tubing and swabbed without response; showed production possibilities while drilling but has failed to show any oil or gas on series of tests. Fresno County.

Blackwell's Corner

Seaboard, 66-17 Beer 17-26s-19e
Drilling ahead 4,850 ft. in gray sand with streaks of shale; top Temblor 470 ft.; base Kreyenhagen 4,125 ft.; had small oil showing in base of Kreyenhagen at 4,124-25 ft.; objective: Point of Rocks zone of Eocene age. Kern County.

Tejon District

Richfield, 1 Tejon Ranch 2-10n-19w
Drilling ahead at 7,090 ft., gray sand and shale; base Basalt 6,449 ft.; water sand indicated by electrical log at 6,800 ft. Kern County.

Delano (Trico) District

Associated, 35-22 Daniel 22-24s-23e
T.D. 11,728 ft., barren gray sand; P.B. 11,000 ft. with 100 sacks cement; cleaned out to 10,900 ft.; ran combination 4½-in. liner to test few stringers of oil sand that showed cut above 10,900 ft.; top gray sand 11,560 ft.; top Olcese gray sand 9,421 ft.; correlating over 200 ft. lower than Standard, 1 Morris.

(Continued on Page 92)

EASTERN TEXAS FIELDS

More Tests Are Started in East Texas Border Area

By R. MARNE SANFORD

DALLAS, Tex., Aug. 19.—New wildcat locations featured the week's developments in the eastern Texas area, there being new tests started in Red River and Van Zandt counties and two new tests in Navarro County, the latter pair being shallow locations.

In Red River County J. F. Morrissey and associates, Fort Worth, have 122-ft. derrick up for a projected 5,000-ft. test as their No. 1 A. F. Tyler, James Miro Survey, 3½ miles southeast of Bogata. The contractor is moving in rig and drilling is expected to commence this week. It will seek production from the Woodbine sand; however, should this horizon prove barren it is understood the test will be carried deeper.

Navarro County's two tests were C. F. Carter, 1 Bridwell, M. Shire Survey, ½ mile north of Angus, which has been drilled to a depth of 26 ft. and is drilling plug on surface casing, and A. J. Willis, 1 M. B. Swanson, J. Johnson Survey. The latter test is rigging up materials.

Van Zandt County's new starter was staked by A. D. Clark and will be his No. 1 C. W. Hallman, spotted 1,700 ft. from the south and 1,320 ft. from the east lines of the R. T. Wheeler Survey, 4 miles southwest of Van.

Rusk Deep Abandonment

Prospects looked bright early in the week for a new deep Pettit lime field in Rusk County; however, failure to obtain a successful test at the bottom of the hole was given as reason for abandoning the operation late in the week. It was J. S. Harrold, 1 Armstrong, Del Carmel Survey, 3 miles southeast of Henderson. The well drilled to 7,506 ft. in the Travis Peak, finishing contract, and was plugged back for testing in a section from 7,163-93 ft. in the upper Pettit lime. Several unsuccessful attempts to obtain a drill-stem test led to the quitting of the deep wildcat.

East Texas Field

Official Texas Railroad Commission figures on pluggings and completions in the large East Texas field, together with reports of a $318,000 sale of producing properties in the field, drew some attention to the area as the week closed.

A total of 222 wells were plugged in the field during the first 7 months of 1940. The record showed that only 268 wells were plugged during the entire 12-month period of 1939. A total of 164 new completions were listed through July of this year, as against a total of 283 new wells for a similar period a year ago, a decline of about 119 wells.

A sale of 31 producing wells on five leases in the field totaling a consideration of $318,000 was announced in Dallas last week by Thomas D. Humphrey, Dallas operator. The acreage and producers were sold to George T. Kimbell and C. J. Bohner, Wichita Falls operators, the new operators having assumed control August 1. All of the properties are in the north end of the field and the new owners have obligated themselves to the extent of $50,000 in improvements to the property.

EASTERN TEXAS COMPLETIONS

EAST TEXAS FIELD

(1-hour gages)

Gregg County

Longview area: Cushing Drlg., 19-A Owens, 30 bbl., 3,644-50 ft.

Kilgore area: Harcher Oil, 4 Laird-Moses, 32 bbl., 3,545-77 ft.

Rusk County

Joiner area: Stanolind, 20 Milstead, 22 bbl., 3,648-3,721 ft.

Texas Canadian, 4 Camp, 20 bbl., 3,585-3,600 ft.

EAST CENTRAL TEXAS

Anderson County

Cayuga field: Carter-Gragg Oil, 7 Goode, 199 bbl., 4,003-07 ft.

WILDCAT OPERATIONS

Freestone County

Arkansas Fuel, 1 O. B. Utley, S. J. Claypool Sur., 4 mi. N of Fairfield. Topped water sand at 3,995 ft., top Georgetown lime 4,485 ft., set casing 4,506 ft.

Falls County

Joy Carruth, 1 Westbrook, Manchaca Sur., 3½ miles NE of Chilton. S.D. 42 ft.

Kaufman County

T. G. Shaw, Tr., 1 Agnes Wynne, B. S. Newman Sur., 8 mi. E Kaufman, lower Trinity test. T. anhy. 5,934 ft., T. Massive 6,123 ft., B. Massive 6,255 ft., T.D. 6,454 ft., S.D.

Leon County

Alexander & Wilhite, 1 C. H. Mills, M. Copeland Sur., 2½ mi. E of Normangee. Top Wilcox 1,020 ft., drilling 1,925 ft.

Limestone County

Frank Bryan, 1 F. Bevill, J. H. Murray Sur., 1 mi. SW Horn Hill. Rigging up materials.

Morris County

C. B. Zuber, 1 G. A. Connor, N. Smithwick Sur., 5½ mi. SW Daingerfield. Set 13⅜-in. casing at 85 ft., top Pecan Gap at 2,525 ft., top Blossom sand 3,587 ft., drilling 3,610 ft.

Navarro County

Carter, 1 Bridwell, M. Shire Sur., ½ mile north Angus, First report.

W. E. McKinney, 1 James, R. D. Newman Sur., 1½ mi. E. Bazzette field. Set 10-in. 66 ft., drilling 1,097 ft.

A. J. Willis, 1 Cheney, W. Reed Sur., 12 mi. SE Corsicana. S.D. 802 ft.

Willis, 1 Swanson, J. Johnson Sur. First report.

Red River County

J. F. Morrissey, 1 Tyler, James Miro Sur., 3½ mi. SE of Bogata; 5,000-ft. test. First report.

Rusk County

J. S. Harrold, 1 M. J. Armstrong, M. D. Carmel Sur., 3 mi. SE Henderson. Top Massive anhy. 6,125 ft., top Pettit 7,172 ft., top Travis Peak, 7,397 ft., to abandon 7,506 ft.

Upshur County

H. C. McGahey, 1 Ludie Turner, SE cor. 200-ac. tr. in A. Butler Sur. Top Pecan Gap 2,380 ft., base Pecan Gap 2,970 ft., drilling 3,070 ft.

Van Zandt County

Clark, 1 Hallman, R. T. Wheeler Sur, 4 mi. SE of Van. First report.

Wood County

Plains Prod., 1 S. I. Smith, S. Calderon Sur., 5 mi. NW Quitman. Top Pecan Gap, 2,568 ft., base Pecan Gap 2,741 ft., drilling 3,537 ft.

EAST TEXAS BORDER

East Texas border counties continued active during the past week with expected extensions to the Joaquin field of Shelby County and the Waskom field of Harrison County.

Joaquin Field

Union Producing Co., 1-A Garrett is testing over the week end after setting casing and perforating at 4,864-4,904 ft. and 4,828-42 ft. The two porous lime zones in the lower Glen Rose showed gas and mud on an earlier drill-stem test and it is expected that the well will produce gas-condensate as do other Joaquin wells to the northwest. When the No. 1-A Garrett is completed, operators will move rig to the No. 1-B Garrett, across the state line into De Soto Parish, Louisiana, about 2 miles northeast of the Joaquin field.

(Continued on Page 87)

By
DAL DALRYMPLE

Third Cumberland Pay Zone Proven, Complete Two Wells

A THIRD pay zone was proven productive and two large oil wells were completed in the Cumberland pool, currently the most interesting area in Oklahoma, to provide the highlights of the past week in state fields.

The completed wells were Pure Oil Co., 1 Stewart 103, SW SE NE 28-5s-7e, the first oil producer to be drilled in Bryan County; and Pure, 1 Thomas 102, SW NE NW 28-5s-7e, on the Marshall County side of the pool.

The new pay zone was uncovered at Pure, 1 Little 101, NE SW SE 28-5s-7e, Marshall County. It flowed 653 bbl. of oil in 18 hours through 2-in. tubing after casing was perforated in the upper Bromide horizon at 4,882-4,924 ft. with 135 shots and at 4,924-77 ft. with 63 shots. Previously it had flowed 167 bbl. in 8 hours at plugged-back depth of 5,087 ft. Bromide was topped at 4,604 ft., and casing set at 4,995 ft. Hole originally was drilled to 5,275 ft. in McLish formation, but water intruded. The Cumberland discovery well is producing from Tulip Creek sand, deepest pay in the pool, and the two newest producers are producing from lower Bromide zones.

J. F. Smith and others, 1 Brown, NE SE NE 6-7-4, pool opener in the Romulus area, St. Louis district, Pottawatomie County, swabbed at the rate of 30 bbl. an hour on potential test, producing from Hunton lime at total depth of 3,993 ft. A second well is being started in the area.

A big gas well was reported in the Chelsea area, Rogers County, at Garfield Exploration Co., 1 Comer, NE SW NW 36-24-16. Yield was estimated at 17,000,000 cu. ft. of gas from pay at total depth of 800 ft., which opens a deeper producing zone for that shallow district.

Estimated Daily Production

Estimated daily production in Oklahoma for the week ended August 17, and for the preceding week, was as follows:

	Barrels	
	Aug. 17	Aug. 10
Allen	5,250	5,225
Billings	6,000	5,950
Burbank	7,050	7,000
South Burbank	7,925	7,900
Balance Osage	17,125	16,900
Blackwell district	3,300	3,350
Bristow-Slick	5,800	5,750
Chandler	1,025	1,000
Crescent	2,100	2,050
Cromwell	2,850	2,850
Cushing-Shamrock	9,050	9,100
Duncan	3,600	3,625
Edmond	3,850	4,025
Fish	3,175	3,175
Fitts	15,350	15,250
Jesse	2,125	2,100
Graham-Fox	2,475	2,425
Gray	800	775
Healdton	8,700	8,700
Hewitt	3,875	3,800
Keokuk	3,100	3,100
Konawa	1,050	1,050
Lucien	7,900	7,850
Moore	1,775	1,850
Northeastern counties	17,100	17,250
Oklahoma City	96,850	87,600
Olympic	1,925	1,925
Ramsey	3,675	3,750
Sasakwa	1,450	1,450
Sholem-Alechem	2,650	2,650
Seminole district:		
Bowlegs	6,650	6,625
Carr City	2,325	2,325
Dora	2,250	2,225
Earlsboro	4,125	4,125
East Earlsboro	1,750	1,750
South Earlsboro	525	525
Little River	6,575	6,550
East Little River	625	625
Maud	550	525
Mission	1,200	1,225
Seminole	6,800	6,850
East Seminole	1,125	1,150
Searight	2,050	2,050
Total Seminole	36,550	36,550
St. Louis-Pearson	25,500	25,500
Tatums-Tussy	2,375	2,450
Tonkawa-Garber-Thomas	3,600	3,625
Wewoka	1,450	1,500
Yale-Jennings	3,050	3,050
Other pools	81,050	79,325
Total Oklahoma	402,475	391,425

WILDCAT OPERATIONS

COMPLETIONS

Atoka County: Thompson Brothers, 1 Richardson, NE SE SW 10-3s-9. Wilcox 2,385-2,401 ft., T.D., dry.

Cotton County: Mohican Drilling, 1 Boyd Stein, NW NW NE 9-5s-9w. Ellenburger 2,363-2,466 ft., T. D.; dry.

Hughes County: Loual Drilling, 1 Jackson, C SW NE 24-9-9, about 4 miles west of Wetumka. Booch 2,535 ft.; 7-in. 2,520 ft.; Cromwell 3,292 ft.; T.D. 3,303 ft.; plugged back 2,575 ft.; gaged 4,000,000 cu. ft. of gas, with 800 lb. rock pressure.

Payne County: W. H. Elson and others, 1 Murphy, SE SE NW 20-19-2e, West Stillwater discovery. Misener 4,549 ft.; Hunton 4,550 ft.; first Wilcox 4,758 ft.; second Wilcox 4,858-71 ft., T.D.; 5-in. pipe at 4,838 ft.; P.B. to 4,720 ft. in Hunton; perf. 4,552-85 ft., flowed 480 bbl. in 12 hr.; ran 2½-in. tubing to 4,520 ft., with ½-in. choke on bottom; flowed 26 bbl. an hour for 18 hours and was shut in; gravity of oil was 42.4° at 84°.

Seminole County: Moss, 1 Gist, S½ SE NE 27-10-6. Misener 4,284 ft.; Hunton 4,286 ft.; total depth 4,354 ft.; dry.

G. W. Shobert and others, 1 Parsons, SW SW NW 29-11-6. Location abd.

Wagoner County: Hartman & Morrow, 1 Trower, NE NW SE 20-18-16. T.D. 949 ft.; dry.

FIRST REPORTS

Hughes County: Don Feagin et al, 1 Nix, SW NE SW 8-9-11, between Alabama and East Wetumka pools. Machine.

Loual Drilling, 1 Stevenson, NE NW SE 24-8-10, about 4 miles east of Yeager pool. Rig, moving in tools.

Latimer County: Whitehead, 1-B Allen, NE NE SW 11-4-19, southeast of Wilburton. Old well being deepened from 890 ft.; lime 1,054-55 ft., showing gas; S.D.

Lincoln County: Mason & Stewart, 1 Crane, SW NE SE 7-12-5, east of South Wilzetta pool. Set 10-in. 116 ft., waiting.

Okfuskee County: W. O. Carter, 1 Bucco, NE NE SE 20-10-12, southeastern part of county. Rigging up standard tools.

Foundation Oil, 1 Berryman, NE NE NE 35-11-8, about ¾ mile northwest of East Cromwell discovery well. Drilling 410 ft.

W. B. Pine, 1 Armstrong, SE SE NE 3-11-10, about 3 miles northeast of Okemah. Building rig.

Tillman County: Price et al, 1 Crow, NW NW NE about 5 miles northeast of Loveland. A 2,000-ft. test, drilling below 100 ft.

FIELD COMPLETIONS

Carter County

Hewitt field: Batson, 2 Walker, NW SW NE 20-4s-2w. Sand 1,949-83 ft.; set 7-in. 1,949 ft.; T.D. 1,985 ft.; shot with 30 qt. at 1,958-83 ft.; pumped 168 bbl.

Boring, 1 Lamb, NE NW NE 29-4s-2w. Set 7-in. 2,289 ft.; T.D. 2,296 ft.; P.B. 2,294½ ft.; pumped 49 bbl.

Gibson & Jennings, 1 Griffin, SE NW SE 20-4s-2w. T.D. 2,044 ft.; pumped 162 bbl.

Caddo County

Cement field: G. L. Pace, 1 Gingrich, SW NE NW 6-5-9w. T.D. 3,640 ft.; dry.

Creek County

Bruce area: Jackson, 1-A Hope, NW NW SW 3-17-9. Prue 2,050-83 ft., T.D.; shot with 80 qt.; pumped 7 bbl.

Glenn pool: Sinclair Prairie, 31 Kiefer, SE SE NW SE 17-17-12. T.D. 1,537 ft.; pumped 14 bbl.

Kellyville field: Wright, 28 Meyer, C SW NW 24-17-10. Red Fork 1,857-1,909 ft., T.D.; shot with 90 qt.; pumped 25 bbl.

Lincreek pool: Brauer, 1 Taylor, C NW SE 31-16-7 Completed.

Lincoln County

Chandler field: Magnolia, 10 Ross, SE NE SE 2-14-3e, old well plugged back to open Oswego lime production in a Skinner sand pool. Old total depth 4,470 ft.; P.B. to 4,015 ft., perf. 3,955-90 ft.; acidized with 1,000 gal.; flowed 367 bbl. of 45-gravity oil, with 750 lb. casing pressure.

Prague pool: Howard Berkey, 1 Gragg, SE SE SE 32-12-6. Prue 3,050 ft.; T.D. 3,283 ft.; shot with 40 qt. at 3,271-83 ft.; pumped 438 bbl.

Mid-States, 1 Proviznik, SW SW SW 33-12-6, first producer on Lincoln County side of pool, north offset to discovery well in Pottawatomie County. Senora sand 3,266 ft.; 7-in. 3,262 ft.; shot with 60 qt. at 3,275-88 ft., T.D.; pumped 264 bbl. oil and 5 bbl. water in 24 hr.; pumped 217 bbl. oil and 7 bbl. water next 24 hr.

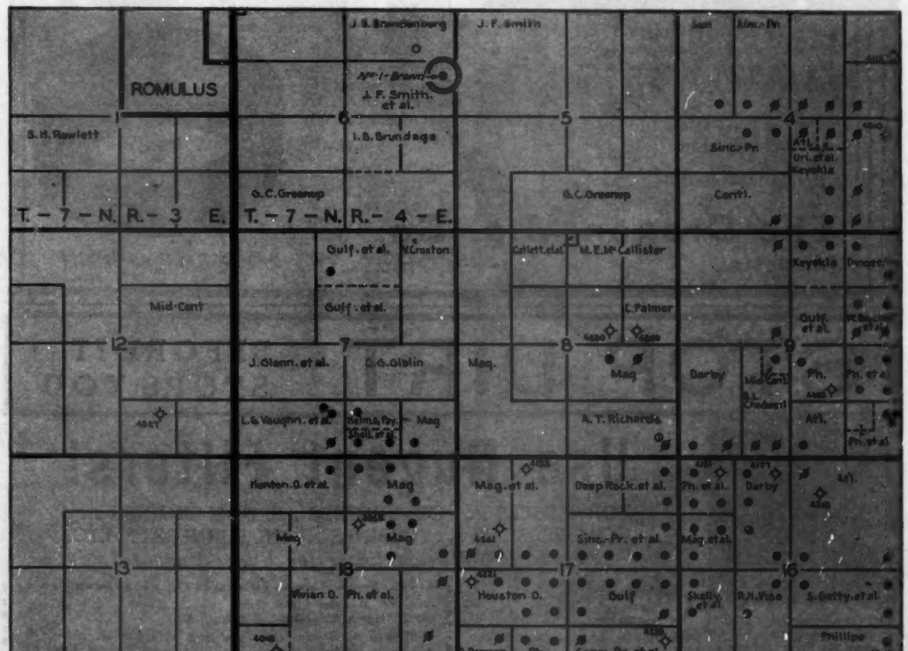
Marshall-Bryan Counties

Cumberland pool: Pure, 1 Thomas 102, SW NE NW 28-5s-7, extended production ½ mile northwest in Marshall County. Bromide 4,560 ft.; sand 4,843-75 ft.; 7-in. 4,975 ft.; T.D. 5,162 ft.; P.B. 5,091 ft.; flowed 810 bbl. through 9/64-in. choke, with 625 lb. casing pressure and 875 lb. tubing pressure.

Bryan County extension: Pure, 1 Stewart 103, SW SE NE 28-5s-7e. Bromide 4,500 ft.; 7-in. 4,890 ft.; T.D. 5,090 ft.; flowed 437 bbl. in 3 hr. through 1½-in. choke, with 2,000,000 cu. ft. gas; flowed 597 bbl. in 24 hr., through 15/64-in. choke, with 1,700 lb. casing pressure and 760 lb. tubing pressure.

Muskogee County

Council Hill area: Ren-Mar O. & G., 6 Sigenthaler,



Midcontinent Map Co., Tulsa

A producing area was opened 1 mile east of Romulus and more than a mile north and west of production in the St. Louis district, Pottawatomie County, at J. F. Smith, 1 Brown, NE SE NE 6-7-4. It produced 330 bbl. of oil in 18 hours from Hunton lime at 3,960-91 ft., total depth. Same operator has started work at his No. 1 Lightfoot, SW NE NE 6-7-4

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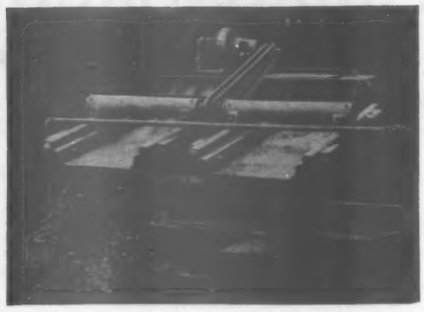

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SE SE NW 17-13-16. T.D. 2,100 ft., pumped 79 bbl.
Jolly-Patton area: J. R. Parks, 5 McDaniel, NE NE SE SE 17-14-19. T.D. 690 ft.; dry.

Okfuskee County

Gregory pool: Moffett, 2 Shawneego, NW NW NE 25-10-11. Set 6-in. 1,920 ft.; sand 2,001 ft.; T.D. 2,033 ft.; P.B. 2,029 ft.; pumped 25 bbl. oil and 10 bbl. water.
Wells, 5 Scott, NW NE NE 25-10-11. Set 6-in. 1,960 ft.; sand 2,038-65 ft., T.D.; shot with 60 qt. at 2,050-65 ft.; pumped 17 bbl.
Cromwell area: Titus, 1 Sands, NE NE SE 26-11-8. Booch 3,088 ft.; T.D. 3,097 ft.; 7-in. 3,077 ft.; shot with 40 qt. 3,085-97 ft.; swabbed and flowed 60 bbl.
Okemah district: Phillips, 1 McMahon, NE NE NW 11-11-10. Cromwell 3,169 ft.; 7-in. 3,194 ft.; T.D. 3,200 ft.; flowed 104 bbl. in 5 hr. through ⅛-in. choke.
Weleetka pool: McMann, 8 Durkee, NE SW SE 2-10-11. Sand 1,628-58 ft., T.D.; 6-in. 1,520 ft.; pumped 14 bbl.
West Weleetka: Fleming, 1-A McKinney, NW SW SE 18-10-11. T.D. 2,181 ft.; junked hole; abandoned.

Okmulgee County

Bald Hill field: Sampson Oil, 1-A Krueger, SE SW SW 28-14-14. T.D. 1,235 ft.; pumped 5 bbl.
A. G. Hazlett, 11 Ashley, C SW NW 29-14-14. T.D. 1,269 ft.; pumped 10 bbl.

Osage County

Bird Creek area: Norris et al, 5 Osage, W½ SW NW SE 15-21-12. T.D. 1,307 ft.; pumped 7 bbl.
Naval Reserve field: Lewis Production, 8 Osage, SE SW SW 27-24-7. T.D. 2,655 ft.; dry.
Pond Creek pool: D. F. Millard et al, 4 Osage, SW NE SE NW 3-28-11. T.D. 965 ft.; pumped 25 bbl.
Osage-Hominy area: Texas, 1 Osage, SE SE SE 1-23-7. T.D. 2,859 ft.; 35 bbl.
South Burbank field: Magnolia, 5 Osage, SW NE SW 14-26-6. Set 6-in. on top of sand at 2,825 ft.; T.D. 2,902 ft.; shot with 15 qt.; flowed 500 bbl.
West Barnsdall: Barnsdall Oil, 11 Osage, SE SE NW NE 11-24-10. T.D. 1,902 ft.; 10 bbl.

Pawnee County

Watchorn pool: Watchorn, 19 Miller, SE NW SE 33-23-3. Layton 2,673 ft.; 5-in. on top sand; T.D. 2,703 ft.; pumped 10 bbl. oil and 10 bbl. water.

Pontotoc County

Bebee field: W. B. Pine, 2 Jeter, SE SW SW 26-5-4. Viola 2,445 ft.; 7-in. 2,465 ft.; T.D. 2,658 ft.; pumped 15 bbl. oil and 150 bbl. water.

Pottawatomie County

Avoca pool: Atlantic, 3 McCurry, SW NE SW 6-6-4. Viola 4,190 ft.; Dolomite 4,276 ft.; T.D. 4,474 ft.; 7-in. 4,422 ft.; P.B. 4,260 ft.; perf. 4,236-54 ft.; acidized 3,500 gal.; pumped 200 bbl.
Gray area: Smith, 1 Goodwin, SE NE NE 24-6-4. Earlsboro 3,021 ft.; T.D. 3,038 ft.; dry.
Vierson, 1 Masters, NE SE NE 27-6-4. Sand 3,037 ft.; shot 3,037-42 ft.; T.D. 3,060 ft.; pumped 17 bbl.
Shawnee pool: G. & M. Drilling, 2 Rodgers, NE SW SW 31-11-4. Earlsboro 4,476 ft.; 5-in. 4,471 ft.; T.D. 4,512 ft.; P.B. 4,494 ft.; pumped 26 bbl. oil and 25 bbl. water.

Seminole County

Traugh pool: Grisso, 3 Orwig, NE SE SE 15-6-6. Senora lime 2,288 ft.; sand 2,324 ft.; T.D. 2,369 ft.; perf. 1,828-35 ft.; gaged 10,750,000 cu. ft. gas, with 660 lb. rock pressure.

Tillman County

Frederick district: I.T.I.O., 2 Copland, CNL SW 1-3s-19w. Canyon 3,124 ft.; T.D. 1,172 ft.; 7-in. 3,171 ft.; perf. 3,125-34 ft.; acidized; potential 85 bbl. oil, with 105 bbl. of water.

Tulsa County

Bixby area: Cummings, 4 Ridder, E½ NW 27-17-13. T.D. 2,017 ft.; 20 bbl.

Wagoner County

Coweta area: C. L. Hester, 1-A Kirchner & White, NW SW SW SE 23-17-15. T.D. 1,180 ft.; dry.
Oneta area: Hatch & Tyson, 1-A Vance, NE SE NW 24-18-15. T.D. 1,032 ft.; dry.

FIRST REPORTS

Carter County

Gibson, 3 Walker.....SE NW NE 20-4s-2w.

Creek County

Vierson, 1 Flannigan.....SW NW NE 24-14-10.
Wright, 29 Meyer.....CSL SW NW 24-17-10.

Jackson County

Altus, 2 Maude.....SW NW NE 15-1n-20w.
Navajo, 1-A Hensley.....SW SW NW 10-1n-20w

Kay County

Elders, 1 Voehl, O.W.D.D.....SE SE NW 34-27-2w.

Lincoln County

Sinclair Prairie, 3 School Land.....C SW NE 16-13-6.

Noble County

Sunray, 1 Guthrie.....SW NE SW 31-21-2w.

Okfuskee County

John Droppleman, 2-A Dill.....NE SE SE 34-12-8.
Texas, 1 Berryman.....NW SE SW 36-11-8.

Oklahoma County

Phillips, 1 Guss.....NE SE SW 27-12-3w.

Osage County

Magnolia, 6 Osage.....NW NE SW 14-26-6.

Payne County

Mid-Continent, 2 Simpson.....SW SW SW 7-18-2e. Old well plugged back from 4,882 ft. to 4,774 ft., perforated in Hunton zone and testing.

Seminole County

Stanolind, 2 Aldridge.....SE SE NE 32-9-8.
Stanolind, 1 Grisso.....NE NW SW 15-9-6.

Pottawatomie County

Sinclair Prairie, 1 Reagan.....SE SE NE 17-7-4 Old well deepened from 3,955 ft. to Wilcox sand

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4,179 ft., T.D. 4,185 ft.; swabbed 105 bbl. in 4 hr., shut in.

Smith, 1 Lightfoot ..... SW NE NE 6-7-4.

WILDCAT DRILLING REPORT

Kiowa County

Lewis, 1 Wooten ..... SE cor. 28-7-17w T.D. 955 ft. in Arbuckle lime, 7-in. casing 892 ft., est. 20 bbl. oil.

Lincoln County

Wilcox, 1 Murphy ..... NE SE SW 7-14-6 Checkerboard 2,410 ft., Oswego 3,183 ft., Prue 3,208 ft., 7-in. casing 3,218 ft., T.D. 3,268 ft. in sand, show oil.

Marshall County

May Oil, 1 Sacrea ..... SW NE SW 17-5s-5e Show oil in sand 2,098-2,105 ft., drilling 2,172 ft., in lime.

Okfuskee County

Burke Greis, 1 Dew ..... NE cor. 9-12-9 Viola 4,010 ft., sandy dolomite 4,069 ft., first Wilcox 4,078 ft., S.S.O., second Wilcox 4,119 ft., T.D. 4,127 ft., P.B. 3,935 ft.

Pawnee County

Benedum-Trees, 1 State ..... SW NW NW 13-21-6 Bartlesville 2,801-35 ft., Mississippi 2,882-3,025 ft., Wilcox 3,060-3,115 ft., show oil, drilling 3,190 ft.

Pottawatomie County

Ellison et al, 1-A Bird ..... SE NE SE 4-9-11 Cromwell 2,918 ft., Mayes 3,435 ft., Hunton 3,554 ft., Viola 3,687 ft., drilling 3,700 ft.

Townsend et al, 1 Lynn ..... NW NE NW 28-6-4 Mayes 3,140 ft., Viola 3,551 ft., T.D. 3,685 ft., to D.D.

Tillman County

Kadane Brothers, 1 Andrews ... NW cor. 35-2s-19w Arbuckle lime 5,530 ft., T.D. 5,627 ft., bailing.

East Texas Fields

(Continued from Page 84)

Waskom is due three new wells shortly, as two in west and south edge locations set casing on the high-pressure gas pay and a third on an inside location approaches the 6,000-ft. pay.

A new Cass County wildcat, located 13 miles southwest of Linden, was staked in the Benjamin Hawkins Survey.

EAST TEXAS BORDER FIRST REPORTS

Wildcat—Cass County

Max Agress, 1 Clark & Boyce Lbr. Co., Lot 2, B. Hawkins Sur.

Smithland—Marion County

H. T. Manning, 1 O. Brown, 282 ft. S, 218 ft. E, NW cor. 10-acre tract, L. Needham Sur.

J. D. Reynolds, 7-B Terry estate, 215 ft. E line, approximately 1,500 ft. S line, W. Coore Sur.

EAST TEXAS BORDER COMPLETIONS

Caddo—Marion County

J. D. Baker, 2 Decker, 500 ft. S, 300 ft. W, NE cor. J. G. Reeves Sur. Pumping 10 bbl., T.D. 2,416 ft., 5½-in. casing 2,210 ft.

John Coats, 5 Ida Burr, 1,600 ft. S, of No. 2, J. G. Reeves Sur. Pumping 35 bbl., 5½-in. casing 2,395 ft., T.D. 2,429 ft.

Smithland—Marion County

H. T. Manning, 1 T. O. Livingston, 250 ft. S line, center E and W lines, 5-acre tract, G. Coore Sur. Pumping 63 bbl., 5½-in. casing, 2,308 ft., T.D. 2,355 ft.

Texas-Canadian Oil Co., 1 B. Mackey, 282 ft. N line, 218 ft. W line, 35-acre tract, L. Needham Sur. Pumping 20 bbl., 5½-in. casing 2,290 ft., T.D. 2,408 ft.

EAST TEXAS BORDER WILDCATS

Bowie County

W. E. Neill, 1 L. Fort, 600 ft. N line, 150 ft. E line, 103-acre tract, L. Peters Sur. T.D. 2,320 ft., report slight show oil, ran electrical survey.

Harrison County

Arkansas-Louisiana Gas, 1-D Abney, James Shandoin Sur. Set 13⅜-in. casing 150 ft., set 5-in. casing 6,215 ft., W.O.C.

Arkansas-Louisiana Gas, 1 Speights Unit, 370 ft. N, 400 ft. E, SW cor. E. Little Sur. Drilling 5,112 ft.

Union Prod., 1 Karslake, T. D. Wilson Sur., 2½ miles SW of Waskom area. D.S.T. 6,057-97 ft., recovered estimated 5,000,000 cu. ft. gas, running casing.

Marion County

Henry & Parson, 1 W. C. Ralph, Eli Usury Sur., 3 miles N of Jefferson. Set 9⅝-in. casing 1,012 ft., flowing gas and no oil, killed, set 5½-in. casing 6,000 ft., perf. 5,986-98 ft. and 5,974-80 ft., tested gas, small show oil, perf. 5,960-68 ft. and 5,890-94 ft., testing.

Sabine County

Sterm & Womack, 1 I. K. Kieth Southwestern Lands, 400 ft. S line, 500 ft. E line, 53-acre tract, L. Grace Sur. T.D. 6,173 ft., twisted off D.S. and lubricated with 100 bbl. oil.

Shelby County

W. C. Parker, 1 F. G. Willey, 480 varas N line, 240 varas E line, 94-acre tract, A. K. English Sur. T.D. 3,482 ft., set 5½-in. casing 3,471 ft., swabbed show oil and gas, acidized with 1,000 gal., S.I.

P. & B. Oil, 2 W. C. Windham, A. K. English Sur. Set 10-in. casing 170 ft., T.D. 5,335½ ft., pumped 20 bbl., 50 per cent salt water, acid and pumped 5 bbl. oil and 28 bbl. salt water, S.I.

Superior Oil Co. of Tulsa, 3 Pickering Lumber Co., 1,620 ft. SE, 660 ft. W easterly NE cor. Thomas Haley Sur. Drilling 3,987 ft.

Union Producing, 1-A Mrs. M. E. Garrett, 932 ft. due E of W line, 1,485 ft. N 30° W of S line, W. M. Moody Sur. Set 9⅝-in. casing 1,653 ft., D.S.T. 4,798-4,898 ft., ¼-in. chokes, W.P. 400 lb., recovered 210 ft. mud and gas, porous lime 4,830-38 and 4,865-98 ft., set 5½-in. casing 4,995 ft., perf. 4,864-4,904 ft. and 4,828-42 ft., testing.

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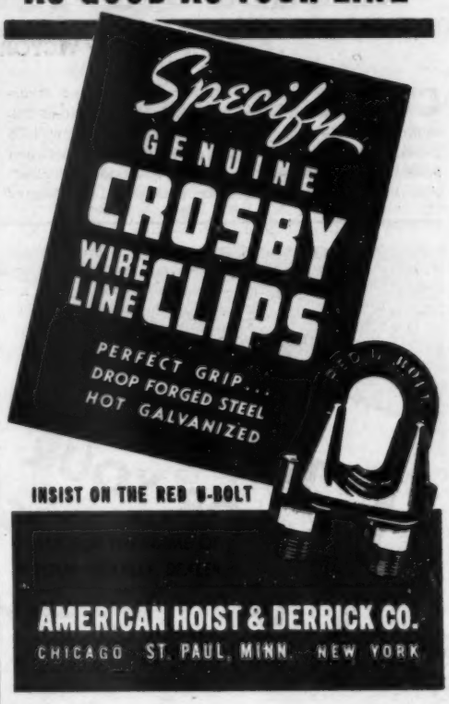

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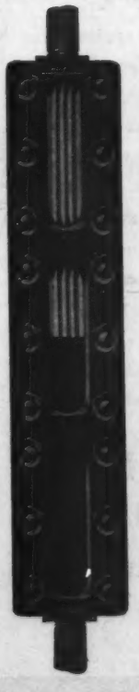

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SOMERVILLE, MASSACHUSETTS

Brazeau Structure in Alberta Yields Large Wet Gas Flow

By VICTOR LAURISTON

CHATHAM, Ont., Aug. 17.—On the Brazeau structure, in the northern Alberta foothills west of Edmonton, Home Oil, 1, LSD 16, 7-13-17w5, blew into production with a wet-gas flow estimated between 8,000,000 and 9,000,000 cu. ft. The gas had a considerable naphtha content, and samples tested at Calgary yielded a distillate between 50° and 55° A.P.I. With continued production the fluid content of the gas appears to be increasing. A separator has been hooked up for a definite test.

The well, started late in 1937, was drilled to 8,713 ft. after encountering a fault from the Fernie shales back to the Blairmore formation around 8,600 ft. The 4½-in. casing was cemented to bottom and an electrolog taken, which indicated three producing oil horizons between 8,160 and 8,550 ft. While the crew was making its first gun-perforation test, in the lowest horizon, the well blew into production under heavy pressure. Production is apparently from a stray sand in the Blairmore, the gas yielding a clear sweet distillate with no indications of sulfur. Samples of the product are being analyzed.

After production tests in the lowest zone are completed, further tests will be made of the middle zone, which the electrolog indicated to be the most promising, and of the upper zone.

The showings are somewhat similar to those encountered in some of the early Turner Valley wells above the Madison limestone. The Brazeau structure is in the foothill belt, east of the Rockies, which extends from the international boundary to the Arctic Circle and of which the Turner Valley field forms a part. The Brazeau well, however, has logged more than 5,000 ft. deeper than the discovery wells in Turner Valley which first got wet gas above the lime. The structure is a very extensive one and has been practically blanketed by Home Oil Co. which holds 65,414 acres, subject only to 10 per cent gross royalty to the Alberta government. Home, 1 was the first of three tests planned by the company.

The field is in a high area, northwest of Red Deer and about 30 miles from Nordegg, the nearest rail point. Depth of drilling and difficulties of transportation will be factors affecting the commercial value of the product.

Turner Valley Completion

Southwest field: Commoil, 3, LSD 13 . . . . . 29-18-2w5
Flowed 1,355 bbl., 1-in. choke, allowable 550 bbl. a day, T.D. 8,611 ft.

Tests in the Lime

Southwest field: Pacific Petroleums, 4, LSD 3, 32-18-2w5, got the Madison at 7,529 ft. and is standing cemented at 7,544 ft., waiting completion of No. 5.

West Central field: Pacific Petroleums, 5, LSD 6, 7-19-2w5, is below 7,830 ft. after getting the Madison at 7,638 ft. Diamond core bits with outer and inner core barrel are being used to take a 4-in. core through the full section of the Madison. This experiment, undertaken for the first time in Turner Valley, is expected to indicate more accurately the lime conditions and the horizons where acidizing would be justified.

Southwest Petroleum, 4, LSD 4, 8-19-2w5, got the Madison at 6,787 ft. and is resuming after cementing at 6,794 ft.

New Test Starting

In West Central Turner Valley Regal Royalties, 1, is rigging in LSD 14, 24-19-3w5. Originally spotted as a joint test of National Petroleum Corp. and Vulcan Oils, the management has been changed, and George Harris, Sr., will be in charge as managing director. National Petroleum rig is being used, and the National and Vulcan companies, with a group of associates, have arranged financing. Location, in the north part of West Central Turner Valley, is about a mile northwest of Arrow Royalties, 2, which produced 25,251 bbl. in July.

Aldersyde Test

In the Aldersyde district, east of Turner Valley, Ranchmen's Oil, 1, LSD 16, 13-20-29w4, is resuming from 7,240 ft. after several months' shutdown. The test, which has been drilling intermittently for more than 10 years, encountered numerous oil and gas shows and is believed to be in the Dalhousie formation, a few hundred feet above the Madison limestone.

Vermilion Field

In the Vermilion field, East Central Alberta, Frank Ruben, associated with E. L. Cord and S. Myron Zandmer, has announced a program of 10 wells to be completed by December 1. Drilling equipment has been moved to Vermilion from California, and it is planned to start new wells at 15-day intervals for the systematic development of the field. Derricks for three tests are already up, and No. 1 is ready to spud. Drilling will be carried to the normal producing horizon for the field, around 2,000 ft. Frank McAteer, of California, formerly with the Burma Oil Co., is in charge of operations.

British Columbia Test

In northern British Columbia Provincial Government, 1, on Commotion Creek, in the Peace River Block, is below 3,500 ft., drilling in a series of coal seams interspersed with conglomerates. Test is logging closely with geological expectations. Production is not expected above 6,500 ft.

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By
DAL DALRYMPLE

Two Falls City Wells Nearing Completion; Outlet for Area

ST. JOSEPH, Mo., Aug. 19.—Impending new wells, arrangements for a pipe-line gathering system and rejuvenation of the discovery well are improving the outlook for the Falls City pool in Richardson County, Nebraska. Two producers are due to be completed soon and another test is about to get under way. With a market outlet in view, the long awaited offset-drilling program in this sector of the Forest City basin is expected to begin soon.

Union Pipe Line Co., Inc., of Centralia, Ill., is obtaining right-of-way for a 4-in. line from the Missouri Pacific Railroad to the pool. Cost of the line and a loading rack is estimated at $15,000 by Thomas H. McCullough, president of the company. He said his firm will post a price of 80 cents a barrel and will run approximately 2,500 bbl. daily to the railroad. The crude will be shipped to Minneapolis to be mixed with Ranch Creek, Wyo., oil.

Thus far only one well in the pool has been allowed to produce, and that not up to capacity. The Searle refinery at Omaha has been taking the oil.

R. L. Campbell, 1 Schock, Lot 4 in 20-1n-16e, at the south edge of the pool, is scheduled for early completion. It topped Hunton lime at 2,244 ft., and cored spotted saturation to 2,249 ft. Free oil appeared when cement plug was drilled and the pay washed. The hole was deepened 6 in., and operators prepared to acidize, with prospects favorable for a producer.

Skelly Oil Co., 1 Davisson, SW NW NE 20-1n-16e, east offset to Harry Harper, 1 Sibbernsen, largest oil well in the field, topped Hunton lime at 2,236 ft. Although the pay was found 26 ft. lower than in the Sibbernsen, the well was reported showing as a good producer. Pipe was cemented for a test.

An encouraging development was reported at the Falls City discovery, Pawnee Royalty Co., 1 Boice, C NE NE 18-1n-16e. Officials said the well pumped 710 bbl. of oil, plus 1½ to 2½ per cent water. At one time the well was scheduled for abandonment due to water encroachment. It was deepened to Viola and Arbuckle horizons after being produced for a time in the Hunton. When the lower formations failed to pay off, it was plugged back to Hunton but continued to produce excessive water despite repeated cement jobs. The company's announcement indicates the water problem has been solved.

E. J. Shaffer, 1 Sandrock, SW NW 20-1n-16e, Richardson County, was preparing to spud, after obtaining a farmout from the crew that drilled the discovery producer. The Guinn brothers, owners of Pawnee Royalty Co., gave the lease of about 45 acres to the crew.

In the Salem area, Forest City Basin Syndicate, 1 Windle, SE NE SE 2-1n-15e, Richardson County, was drilling around 2,000 ft. M. J. Lewis, 1 Wittwer, NE NE 22-1n-14e, was drilling at about 1,000 ft.

In the Auburn area, the I. T. I. O. company announced its No. 1 Schaible-Kutter, C NE SW 29-3n-16e, Richardson County, was tested and would yield about 500 bbl. daily on the pump, producing from Hunton lime.

Black Gold Operating Co. and J. O. Isaack, 1 Ord, C NW NW 8-5n-14e, Nemaha County, Nebraska, apparently is a failure in Hunton lime. The lime was found at 2,249 ft. and cored from 2,251-2,263 ft. with nothing showing. Operators may decide to drill on to Viola lime.

Missouri's most interesting wildcat still was battling water encroachment. It is the Brin & Nathan, 1 Decker, C NW NW 1-61-38w, Holt County. Cementing of a casing leak at 1,962 ft. apparently was successful, but water continued to come in and it was announced the cement had channeled where 7-in. casing had been set at 2,300 ft. A squeeze job was ordered. Almost a month has elapsed since a showing of oil was found in Hunton lime, with the hole bottomed at 2,310 ft.

O. M. Evans, 1 Arnote, SE NE 36-55-29w, Caldwell County, west of Polo, had an estimated 1,750,000 cu. ft. of gas at 397-425 ft., but water intruded and the test was being cemented. Evans, 1 Lamar, SW NE 31-55-28w, is a new location. A. W. Hutchings, 1 Fowler, NE SE SW 36-55-29w, Caldwell County, was shut down at 455 ft., where it gaged 30,000 cu. ft. of gas, and was expected to be abandoned. H. A. Black, 1 Schempp, SW SW 21-62-10w, Knox County, Missouri, was reported to have had a showing of oil in a lime break below Kinderhook shale at 550 ft. and pipe was being run. A hot lease play continues in Atchison County, Missouri, northeast of the Nebraska production.

Estimated Daily Production

Estimated daily production for Kansas for the week ended August 17, and for the preceding week, was as follows:

	Barrels	
	Aug. 17	Aug. 10
Oxford City	700	650
Burrton	7,900	6,700
Ritz-Canton	4,150	3,450
Graber	2,300	2,000
Hollow-Nikkel	1,750	1,200
Lerado	500	750
Voshell	1,700	1,450
Wellington	1,750	1,400
Ellsworth County:		
Lorraine	1,400	1,650
Other pools	3,890	3,160
Rice-Barton counties:		
Bloomer	4,950	2,100
Chase	4,800	4,050
Geneseo	3,450	3,650
Raymond	850	1,000
Silica	15,350	12,200
Keesling	700	850
Wherry	3,900	2,900
Miscellaneous Rice	755	1,350
Miscellaneous Barton	8,955	7,505
Trapp district	14,300	12,750
Balance Russell County	18,600	18,050
Sedgwick County	3,200	3,050
Ellis County:		
Bemis	12,550	10,100
Miscellaneous	7,880	7,120
Kingman County	845	650
Stafford County	9,875	10,420
Greenwood County	7,950	7,950
Eldorado	7,300	7,400
Other fields	34,750	33,645
Total Kansas	187,000	169,150

In the Kansas sector of the Forest City basin, Dan McLaughlin, 1 Bower, SE NE 5-10-20e, Jefferson County, was reported showing 8,500,000 cu. ft. of gas at 1,428 ft. and is the third gasser in the McLouth pool. Buckley and others, 1 Hubbard, SE SW 11-12-21e, Leavenworth County, gaged 1,500,000 cu. ft. of gas at 1,327 ft.

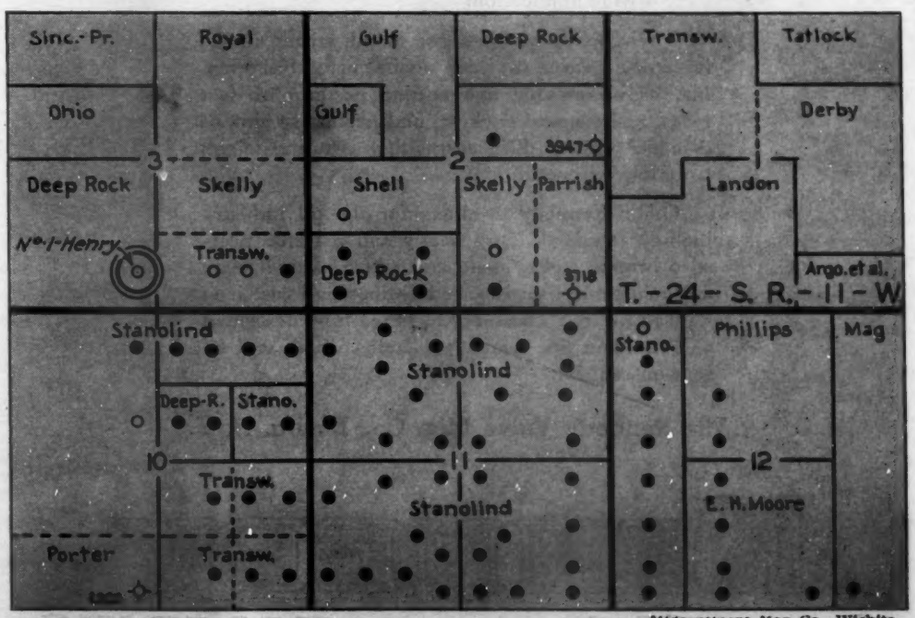
A Lansing lime pool apparently has been opened in Barton County, Kansas, offsetting the abandoned Eveleigh-Arbuckle lime pool. Imo Oil & Gas Co., 1 Eveleigh, C E½ SW NE 3-18-14w, perforated casing in Lansing lime at 3,135-60 ft. and 3,180-95 ft. and acidized with 1,000 and 3,000 gal. Packer gave way and operators doubted the upper pay zones received the treatment. On the pump 4 hours, it yielded 8 bbl. of oil an hour and was shut down to reacidize.

Two western Kansas wildcats held attention at the week end. Shell Oil Co., 1 Bean, SE SE SW 21-23-12w, about 4 miles southwest of the Richardson pool, Stafford County, cored saturation in Arbuckle lime at 3,840-45 ft. It also had a small showing of oil at 3,737-40 ft., in Viola lime topped at 3,712 ft. Operators were due to bail down rotary fluid before drilling cement plug in 4½-in. casing set on top of Arbuckle lime at 3,839 ft.

Duwe & Farris and H. H. Royer, 1 Hutchinson, SW SW SE 29-21-8w, about 8 miles southwest of the Wherry pool, Rice County, was testing after perforating with 96 shots at 3,285-3,320 ft., in chat pay topped at 3,276 ft. It found good porosity and saturation at 3,285-92 ft. and 3,317-19 ft. Arbuckle lime at 3,691-3,700 ft., total depth, was dry.

Walter S. Fees, 1 Lemert, SE NE SW 11-34-4e, opened a Mississippi chat gas field in Cowley County. It gaged 2,000,000 cu. ft. of gas from chat at 3,084-3,110 ft., total depth. Rock pressure was 1,087 lb.

New wildcats included: Crown Petroleum, 1 Linder, NE NE SW 24-17-14w, about 3 miles west of the Hoisington pool; M. B. Armer, 1 Ney, SW SW NE 17-16-11w, about ½ mile east of the West Prusa pool; and A. G. Kaiser, 1 Sansen, SW SW NW 12-16-14w, about ¾ mile southwest of the Susank pool, all in Barton County; and Robertson Petroleum, 1 Radke, S½ SE SW 18-15-14w, northeast of the Boxberger pool, Russell County. Mohawk Oil Co. staked location on the Schafer lease in SE SW SE 4-27-6e, about 2 miles northeast of Leon, Butler County. It is to be a Mississippi lime test in an old area which has been producing from Viola lime at about 3,180 ft. for



Midcontinent Map Co., Wichita

Deep Rock Oil Corp., 1 Henry, E½ SE SW 3-20-11w, was completed for daily potential of 2,968 bbl., extending the Zenith pool, Stafford County, to the northwest. Production was from Viola lime at 3,799 ft., total depth. Both Viola and Misener horizons produce at Zenith

several years. About 38 new tests in proven areas were reported.

KANSAS COMPLETIONS

WILDCATS

Dickinson County: Midland Oil and R. L. Mendenhall, 1 Haines, SE SW SW 23-16-4. Mississippi 2,329 ft., 5-in. on top of lime, T.D. 2,411½ ft. Dry.

Ellsworth County: Alva Billings, 1 Vanek, SW SW SE 25-14-10w, northwestern part of county. Topeka 2,380 ft., Lansing 2,770 ft., Arbuckle 3,121 ft., T.D. 3,129 ft. Dry.

Pratt County: Herndon Drilling and others, 1 Montgomery, CEL SW 13-27-13w, southeast of Iuka pool. Topeka 3,245 ft., Lansing 3,716 ft., Mississippi 4,229 ft., Viola 4,278 ft., Simpson zone 4,321 ft., Simpson sand 4,330 ft., Arbuckle 4,441-58 ft., T.D. Dry.

Barton County

Feltes pool: Black-Marshall, 3 Weber, N½ NW SE 14-16-12w. T.D. 3,380 ft. in Gorham sand, swabbed 59 bbl.

Prusa area: B. B. & M. Oil, 4 Esfeldt, CNL SW SE 28-16-11w. T.D. 3,379 ft., acidized with 3,000 gal., made 3,000-bbl. potential from Arbuckle.

Solar, 2 Schartz, SW SW NE 18-16-11w, North Prusa. T.D. 3,382 ft. Dry.

Silica-Ellinwood district: Stanolind, 22 Panning, C NW 11-20-11w. T.D. 3,276 ft. in Arbuckle, potential calculated at 3,000 bbl.

Buchanan and others, 1-B Langfeld, CNL SE SW 14-20-11w. T.D. 3,290 ft., 3,000-bbl. potential.

Gulf, 3 Kasselman, S½ NE SW 23-20-11w. T.D. 3,282 ft., potential 2,357 bbl.

Lario, 4-B Zahorsky, CSL SW NE 23-20-11w. T.D. 3,276 ft., potential 3,000 bbl.

Trapp field: Shell, 2-C Bitter, SE NE SW 5-16-13w. T.D. 3,356 ft. in Arbuckle, swabbed 188 bbl.

Shell, 4 Schneider, CEL SE 12-16-14w. T.D. 3,340 ft. in Arbuckle, acidized, swabbed 238 bbl.

Phillips, 7 Bitter, CSL SE NE 6-16-13w. T.D. 3,338 ft. in Arbuckle, acidized, potential 3,000 bbl., calculated.

Kaiser & Sharon, 2 Luerman, SE SE SE 18-16-13w. T.D. 3,380 ft. in quartzite. Dry.

Butler County

Brandt pool: Simpson Oil, 2 Cannon, W½ SW SW 15-28-7. T.D. 2,658 ft. in Mississippi lime, potential 423 bbl.

Cowley County

Frog Hollow pool: Hawkeye Oil, 5 Byers, W½ NE NW 21-32-5. T.D. 3,079 ft., potential 1,157 bbl.

Ellis County

Bemis field: Champlin, 1-C Hadley, CNL NW NE 20-11-17w. T.D. 3,391 ft. in Arbuckle, acidized, potential 2,024 bbl., calculated.

Ryan Consolidated, 7-A Bemis, CSL N½ NW 22-11-17w. T.D. 3,422 ft., potential 2,316 bbl.

Blue Hill pool: J. J. Hall, 4-A Oswald-C, SE SW NE 11-12-16w. T.D. 3,414 ft., potential 1,102 bbl.

Burnett pool: Bay-Newfoundland, 2-A Barbier, SE NE NW 1-11-18w. T.D. 3,586 ft. in Arbuckle, acidized, potential 3,000 bbl., calculated.

Walter pool: Carter Oil, 2 Weisner, N½ SW SE 11-12-18w. T.D. 3,723 ft., pumped 16 bbl.

Ellsworth County

Ehler pool: Skelly, 1 Meyer, CSL SW NE 35-16-10w. T.D. 3,298 ft. in Arbuckle, potential 3,000 bbl., calculated.

Lorraine pool: Texas, 1 Rolfs, NW SW SW 13-17-9w. T.D. 3,081 ft. in Lansing, pumped 16 bbl.

Stoltenberg district: Stanolind, 3-D Stoltenberg, CWL NW NE 26-16-10w. T.D. 3,306 ft. in Arbuckle, acidized, potential 2,952 bbl., calculated.

Beardmore Drilling, 3 Talsky, W½ SE NE 8-16-10w. T.D. 3,302 ft., potential 3,000 bbl.

L. H. Wentz, 1 Sebesta, N½ SE NW 6-16-10w. T.D. 3,366 ft. Dry.

Greenwood County

Burkett pool: McFann and others, 1-A Demler, NW NE NE 23-23-10. T.D. 2,125 ft., pumped 10 bbl.

Severy pool: C. C. Whittiker and others, 2 Adams, NE NW SW NE 17-28-11. T.D. 1,229½ ft., pumped 50 bbl.

Harvey County

Burrton field: E. J. Shaffer, 1 Saylor, W½ SW SW 17-23-3w. T.D. 3,266 ft., potential 590 bbl.

Jefferson County

McLouth pool: D. W. McLaughlin and others, 2 Darks, NE SW NW 4-10-20. T.D. 1,412 ft., gaged 14,000,000 cu. ft. gas.

McPherson County

Bornholdt pool: Hartman and others, 3 Swanson, W½ SE SW 18-20-5w. T.D. 3,321 ft. in chat, 52 bbl., temporary potential, minimum well.

Tulsa Oil Corp., 3 Mattson, CSL NE SW 19-20-5w. T.D. 3,312 ft. in chat, potential 3,000 bbl., calculated.

Roxbury pool: Stelbar, 2 Jones, CEL NW NE 19-17-1w. T.D. 2,686 ft., potential 1,404 bbl.

Phillips County

Bow Creek area: R. E. Hess & Son, 1 Donaldson, CEL SE NE 25-5s-18w. Dry at 3,155 ft., T.D.

Pratt County

Cunningham field: Skelly, 8-A Krehbiel, CNL NE 25-27-11w. T.D. 3,477 ft., potential 625 bbl.

Rice County

Bornholdt pool: Transwestern, 2 Shumway, CSL NE NE 13-20-6w. T.D. 3,355 ft. in chat, potential 110 bbl., retest.

Chase pool: McPherson Drilling, 5 Cramm, S½ NW NW 15-19-9w. T.D. 3,200 ft. in Arbuckle, acidized, potential 3,000 bbl.

Russell County

Fairfield pool: Earl F. Wakefield, 1 Meharg, NE NE 16-15-13w. T.D. 3,338 ft. in Arbuckle, acidized, potential 3,000 bbl., calculated.

Hall-Gurney field: Skelly, 12 Opdycke, CNL NE NW 32-14-13w. T.D. 2,677 ft. in Lansing lime, potential 1,402 bbl.

Stearns Drilling, 4-A Olson, W½ SW NW 27-14-14w. T.D. 3,070 ft. in Lansing, acidized, potential 2,710 bbl.

Aylward Production, 8 Holl, S½ N½ SW 22-14-14w. T.D. 3,109 ft. in Lansing, acidized, potential 3,000 bbl.

Trapp field: Mid-Continent, 6 Ochs, SW SW NE 35-15-14w. T.D. 3,338 ft. in Arbuckle, acidized, potential 402 bbl.

Carter, 3 Sellens, CNL SE 17-15-13w. T.D. 3,226 ft. in Arbuckle lime, potential 328 bbl., on retest.

Skelly, 16 Neidens, CSL N½ SE 32-15-13w. T.D. 3,336 ft. in Arbuckle, potential 2,830 bbl.

Stafford County

Drach area: Vollmer, Simpson and others, 1 Hahn, CEL SE NE 10-22-13w. T.D. 3,790 ft. Dry.

Zenith field: Transwestern, 2 Johnson, CEL SW SE 3-24-11w. T.D. 3,769 ft. in Viola lime, potential 3,000 bbl., calculated.

E. H. Moore, Inc., 1 Johnson, SW NW NE 13-24-11w. Deepened from Misener sand to Viola lime at 3,813 ft., potential 3,000 bbl., calculated.

Deep Rock, 1 Henry, CEL SE SW 3-24-11w, extended field ¼ mile northwestward. Viola lime 3,733-98 ft., T.D., acidized 3,000 gal., swabbed 320 bbl. in 9 hrs., potential 2,968 bbl., calculated.

Stanolind, 2-A Farris, CEL NE SE 15-24-11w. T.D. 3,829 ft. in Viola, potential 1,913 bbl., calculated.

WILDCAT DRILLING REPORT

Butler County

Transwestern Oil, 1 Buck . . . C S½ SW NE 35-30-14w Florence 2,202 ft., Lansing 3,821 ft., drilling 4,314 ft.

Pratt County

Cities Service, 1 Lehrling . . . . . NE SW SW 19-27-11w T.D. 4,529 ft., set 5-in. casing 4,489 ft.

McPherson County

Broadwater, 1 Heaton . . . . . C E½ SE SE 28-17-1w Hunton 2,979 ft., 5-in. casing 3,043 ft., drlg. 3,166 ft.

Rice County

Royer, Duwe & Farris, 1 Hutchins . . . . . CWL SW SE 29-21-8w Sooy 3,276 ft., show oil 3,317-19 ft., Viola 3,541 ft., Simpson 3,631 ft., Arbuckle 3,691-3,700 ft., T.D., no shows, P.B. to 3,319 ft.

Stafford County

Shell and Atlantic, 1 Riley . . . . . SW cor. 28-23-11w Topeka 2,858 ft., Lansing 3,323 ft., Viola 3,648 ft., stain in core 3,648-68 ft., drilling 3,678 ft.

Shell, 1 Bean . . . . . SE SE SW 21-23-12w Simpson sand 3,798 ft., Arbuckle 3,839 ft., show oil 3,840-45 ft., T.D., running 4-in. casing.

Illinois Fields

(Continued from Page 77)

Wayne County

Chevigny, 1 Cook . . . . . S½ SW NE 25-2n-6e Base Golconda 2,722 ft., Paint Creek lime 2,990 ft., Benoist 3,007 ft., Ste. Genevieve 3,124 ft., drilling 3,246 ft.

White County

Parker, 1 Phelps . . . . . SE NW NW 16-6s-9e Waltersburg 2,268 ft., H.F.W. 2,283 ft., P.B. to 2,280 ft.

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LOUISIANA GULF COAST

China Prospect and Iowa Deep Sand Tests Share Interest

By NEIL WILLIAMS

NEW ORLEANS, La., Aug. 19.—As drilling operations along the Louisiana Gulf Coast were being gradually resumed following last week's tropical storm, main interest in the district continued to be centered on the China prospect, Jefferson Davis Parish, where Union Sulphur Co. prepared to make a production test of No. 1-A Calcasieu National Bank. An electrical survey was being made after cement was drilled out from the bottom of the hole at 9,529 ft. An earlier attempt to make an electrical survey of the hole below the casing cemented at 9,487 ft. failed when the well attempted to blow out. Perforations for the production test are expected to be made at 8,555-62 ft., or 9,278-9,305 ft., where electrical surveys and sidewall cores showed favorable indications. The well is located in Section 2-8s-4w, and is the fourth well to be drilled on the structure.

Atlantic Refining, 1 Kay Unit, has apparently defined the Wilcox sand in the Neale field, Beauregard Parish, to the north, as the well missed the discovery sand at 8,300 ft., and is now bottomed at a total depth of 8,405 ft., where an electrical survey is being made. The company has four producing wells in the 8,300-ft. pay and if the present test proves dry it will be the first since the field was established earlier in the year. The company has two other operations. No. 2 Spiers is drilling in shale below 7,026 ft., while No. 2 D. A. Whitmer is drilling in shale below 6,700 ft.

Iowa Deep-Sand Possibility

In the Iowa field, Calcasieu Parish, Magnolia Petroleum Co. prepared to test No. 9 Wait, a workover job which may open a new sand for the field and create additional development. The well is bottomed at 8,215 ft., and cement is being drilled out preparatory to perforating casing at intervals from 8,215-25 ft. Should the well be completed for a commercial producer it will establish the deepest production which heretofore has been from approximately 6,900 ft.

W. T. Burton and others, 1 Mayo Realty, a wildcat located on the South Lake Charles Parish prospect, Calcasieu, continues to attract attention as the well started to blow out while preparing to core at a total depth of 10,847 ft. The drill stem became stuck and the operators are now fishing. The sand section was topped at 10,843 ft. An electrical survey the previous week showed a gas sand at 10,520-60 ft., and the section was confirmed by sidewall coring.

Production from a new and deeper sand was opened in the Bay St. Elaine field, Terrebonne Parish, as Texas, 4-B State, flowed 259 bbl. per day through a 5 32-in. choke. Drilled to a total depth of 8,910 ft. the hole was plugged back and the well was completed through perforated casing at 7,635-7,755 ft. Prior to the completion, the deepest producing horizon was at approximately 6,800 ft.

Lake Salvador Field

California Co., 1 Delta Minerals, Unit No. 5, in the Lake Salvador area, Plaquemines Parish, was completed for an initial production of 18 bbl. per hour, flowing through a 4/64-in. choke. Tubing pressure was 1,100 lb. Gravity of the oil tested at 42.8. This well is situated about ½ mile northeast of the same company's No. 1 Delta Minerals Unit No. 7, and production is from a new sand at 7,485-90 ft. This area was opened several months ago by No. 1 Delta Minerals Unit No. 7 which flowed pipe-line oil for several days from sand at 9,900 ft., but due to salt-water intrusion, the hole was deepened to 10,807 ft. where it is expected to be abandoned.

Another extension was being marked up for the Paradis field, St. Charles Parish, as Texas Co. prepared to test No. 5 L. L. & E. Paradis, several hundred feet due north of the discovery well. The hole is bottomed at 11,190 ft., with sand showing oil and gas logged at 10,340-10,410 ft.

Barataria Field

The Barataria field, Jefferson Parish, was extended to the north by the completion of Carter, Perrin & Bryan, 1 Westfeldt-Penniman. The well is testing through perforated casing opposite oil sand at 8,200-08 ft., and is flowing at the rate of 10 bbl. of oil per hour through a 5/32-in. choke.

LOUISIANA GULF COAST COMPLETIONS

Ascension Parish

Sorrento dome: Sorrento Syndicate, 2 Lotta Lacey, 4,048 ft., dry.

Avoyelles Parish

Eola field: Gulf, 5 Mouliere, perf. casing 8,542-55 ft. and 8,492-8,532 ft., 559 bbl., ¼-in. choke.

East Baton Rouge Parish

Farris & Golding Drilling, 1 Paulet, 7,512 ft., dry.
University field: Sugarfield, 3 Community, perf. casing 6,802-06 ft., 264 bbl., 10/64-in. choke.
Sugarfield, 1 Haas, 7,300 ft., dry.

Iberia Parish

New Iberia field: Texas, 7 Bryant, perf. casing 3,488-3,537 ft., 64 bbl., pumping.

Iberville Parish

Bayou Blue field: Superior, 3 Schwing, perf. casing 4,954-64 ft. and 4,970-74 ft., 162 bbl., ⅛-in. choke.

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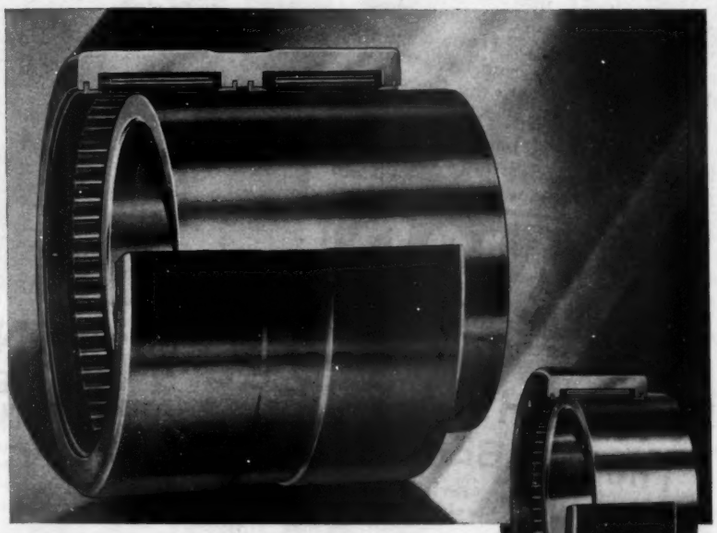

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La Fourche Parish

La Fourche Crossing field: Hawkins & Grubb, 1 Thibodaux, perf. casing 10,097-10,112 ft., 80 bbl., ¼-in. choke.
Golden Meadows field: Texas, 8 State, perf. casing 2,652-85 ft., 130 bbl., 5/32-in. choke.
Valentine field: William Helis, 7 Valentine Sugars, perf. casing 6,892-6,900 ft., 440 bbl., ¼-in. choke.

St. Charles Parish

Paradis field: Texas, 1 Sunset Realty, perf. casing 9,922-85 ft., 80 bbl. distillate, ⅛-in. choke.

St. Martin Parish

Anse La Butte field: Crosby Drilling, 1 Republic Prod., sand 4,710-45 ft., 356 bbl., ⅛-in. choke.

Plaquemines Parish

Garden Island: Texas, 46 State, perf. casing 4,025-75 ft., 455 bbl., ⅛-in. choke.

Terrebonne Parish

Bay St. Elaine field: Texas, 4-B State, perf. casing 7,635-55 ft., 259 bbl., 5/32-in. choke.
Lake Pelto field: Texas, 33 State, top sand 5,344 ft., T.D. 5,535 ft., dry.

LOUISIANA GULF COAST WILDCATS

Acadia Parish

Humble, 1 Leger, South Crowley prospect, S.D., high water.

Ascension Parish

Humble, 40-B Community, Darrow dome, drilling 9,100 ft.

Calcasieu Parish

W. T. Burton, 1 Mayo Realty, South Lake Charles prospect. Well tried to blow out; stuck drill stem.
Hamman Exploration, 1 Sabine Rice, 3-11s-11w. Coring shale 9,025 ft.

Cameron Parish

Superior, 3 State, Calcasieu Lake dome. Drilling shale 11,046 ft.
Superior, 3 Vincent, West Hackberry field. Drilling shale 8,725 ft.

Jefferson Parish

Shell, 1 State, 27-20s-24e. T.D. 9,497 ft., fishing.

Jefferson Davis Parish

Continental, 1 Krielow, South Roanoke field. T.D. 9,759 ft., 7-in. casing on bottom.
Union Sulphur, 1-A Calcasieu National Bank, China prospect. T.D. 9,529 ft., recemented casing, drilling out cement.

La Fourche Parish

Gulf, 1 Allen Land Co., deep test, south edge Golden Meadows field. Drilling shale 11,936 ft.
Tide Water, 2 Delta Farms, southwest discovery well Delta Farms field. Drilling shale 3,456 ft.

Plaquemines Parish

Gulf, 1-E Buras Levee District, West Bay prospect. Drilling shale 11,023 ft.

Rapides Parish

Rantex, 1 M. T. Clark, Lecompte prospect. Coring for Wilcox formation, 6,875 ft.

St. Mary Parish

Sun, 1 Bell Isle Corp., Belle Isle dome. T.D. 11,117 ft., fishing for stuck drill pipe.

Terrebonne Parish

Stanolind, 1 State, Bay Junop dome. Drilling shale 10,585 ft.

Vermilion Parish

Humble, 1 School Board, due west of discovery well, Erath field. S.D. 9,339 ft., high water.

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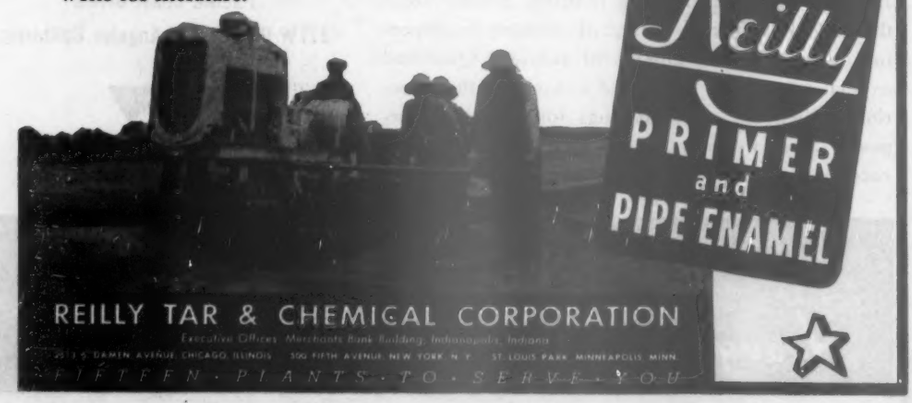

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California Fields

(Continued from Page 84)

in 36-24s-23e; present outlook: doubtful; may back up and test potentiality of gas sand. Tulare County.

Buena Vista Hills District

Honolulu, 25-F fee 10-32s-24e
Drilling ahead at 6,495 ft. in brown shale; located on Buena Vista anticline inside productive limits of Midway-Sunset field of Kern County and is first deep test started; production possibilities regarded as exceptionally favorable with additional depth; present formation is brown shale with streaks of tight gray fine sand, showing some oil; main sand body has not yet been found; agreement signed several years ago by operators provides for unification of drilling operations.

Rio Bravo Outposts

Superior, 1 Riggs 21-28s-25e
Fishing drill collar and bit at 8,740 ft.; T.D. 12,324 ft. in barren gray sand; Rio Bravo sand topped at 12,260 ft. and is barren to present depth; well at this depth defines limits of production. Kern County.
Superior, 1 Bohna 20-28s-25e
Superior, 1 Devine 21-28s-25e
Status of these leases and locations will be determined by outcome of work on No. 1 Riggs, which is nearer productive limits. Kern County.

COASTAL DISTRICT

There were no developments of importance in the Coastal district during the current week as none of the various wildcats showed any change for either better or worse. The Texas Co. found the Vaqueros wet in No. 1 Bishop, a wildcat in the Goleta district in 13-4-29, and is drilling ahead for a look at the underlying Sespe. In the Lompoc district Tide Water Associated Oil Co. is drilling ahead in the Temblor and is coring ahead for the Vaqueros. This wildcat, located in 12-6-33 on the Souza property, found some basalt higher up in the hole but this has proved to be an abnormal intrusion as the base was found at 460 ft. This wildcat has two chances for production as the Vaqueros and Sespe are productive in this region. In the Sespe district of Ventura County, Merchants Petroleum Co. is rotating ahead slowly in No. 8 Cochran in 1-4-20, and at last reports was still in Sespe red shale, a characteristic of this formation. The objective is the underlying Eocene which has not yet been found productive in the Coastal area.

COASTAL DISTRICT COMPLETIONS

Ventura Avenue Field

Shell, 123 Taylor 29-3n-23w
Flowed 2,957 bbl., 30.9-gravity, 2.3 per cent cut, 3,239,000 cu. ft. gas, 128/64-in. bean; pressure 250/1,400 lb.; T.D. 7,540 ft.; elev. 565 ft.; 7⅝-in. water string cemented 6,347 ft., 1,068 ft. of 5½-in. liner landed 7,535 ft., perforated at 6,355-6,569 ft., 6,614-6,705 ft., 6,771-7,165 ft., 7,220-7,535 ft. Ventura County.
British-American, 1 Barnard 22-3n-23w
Flowed 573 bbl., 30.6-gravity, 5 per cent cut, 600,000 cu. ft. gas, 23/64-in. bean; pressures with 14/64-in. bean 825/1,150 lb.; formation test 8,300-8,405 ft. flowed 1,200 bbl. salt water; formation test 9,222-9,490 ft. recovered 66 stands clean oil; T.D. 9,490 ft., redrilled 9,457 ft.; 1,222 ft. 6⅝-in. liner landed at 9,454 ft. and cemented through perforations below water sand at 9,100 ft.; elev. 472 ft. above sea level. Ventura County.

COASTAL DISTRICT WILDCATS

Betteravia District

Union, 2 Pezzoni 33-10n-35w
Drilling ahead at 5,682 ft. in Sisquoc sand and shale. Santa Barbara County.

Goleta District

Texas, 1 Bishop 13-4n-29w
Drilling ahead at 3,760 ft.; top Vaqueros 3,306 ft.; still in Vaqueros; formation test 3,306-64 ft. of Vaqueros showed salt water; will drill underlying Sespe. Santa Barbara County.

Lompoc District

Associated, 1 Souza 12-6n-33w
Drilling ahead at 2,060 ft. in Temblor sandy shale; coring for Vaqueros; base of Basalt 460 ft. Santa Barbara County.

Sespe District

Merchants, 8 Cochran 1-4n-20w
Eocene test; still in Sespe formation of red sand and shale at 2,570 ft.

Wilcox Sand and Austin Chalk Share Spotlight

By F. L. SINGLETON

CORPUS CHRISTI, Tex., Aug. 19. — While main interest in the Southwest Texas district centered on La Salle County as the result of a new Wilcox sand discovery, considerable attention was attracted to the Balcones fault-line district by the opening of an Austin chalk field in Caldwell County, and the testing of several important outpost wells in proven fields throughout the district.

H. R. Cullen, 1 Washburn, a wildcat situated about 7 miles southwest of Fowlerton in La Salle County, has apparently opened another Wilcox sand producing area, and the first production in the county, as the well is shut in for storage after flowing at the rate of 2½ bbl. of 40.6-gravity oil per hour through a ⅛-in. choke. Working pressure on the tubing was 120 lb., and shut-in casing pressure 530 lb. From 5 p.m. August 14 to 8 a.m. August 15 the well flowed 22 bbl. of oil in 15 hours through a 7/64-in. choke under a tubing pressure of 265 lb.

The well was drilled to a total depth of 8,300 ft., where mechanical trouble developed, and the hole was plugged back to 5,434 ft. Five and one-half inch casing was cemented at approximately 5,600 ft., and the casing was perforated with 47 holes at 5,417-25 ft. When the well was swabbed in, it flowed at the rate of 10 to 15 bbl. of fluid in 1½ hours before going dead. Forty per cent of the fluid was salt water. A packer was set to cut off the bottom 3 ft. of perforations, and the operator set nine flow valves spaced 465 ft. apart from 500 ft. off bottom to the surface. When the well was shut in, there was no evidence of salt water.

The well is located several miles updip from previous deep Wilcox development, and the formation was topped at 3,612 ft. Location is in the L. W. Ernest Survey on a block of several thousand acres.

This is the second field to produce from the Wilcox formation in Southwest Texas, being over 100 miles southwest from the Thomaston field in De Witt County, which produces distillate from sand at 7,855-65 ft. The field was opened this year by Atlantic Refining Co., which is engaged in drilling a second well on the structure, No. 1 W. E. Conwell, about 1 mile northeast of the discovery well. This well is drilling below 7,400 ft. Zone tops are: Marginulina Cocoaensis, 3,754 ft.; Massalina Pratti, 3,832 ft.; Textularia Hockleyensis, 3,924 ft.; glauconite, 4,491 ft.; Textularia Dibollensis, 4,542 ft.; Discorbis Yeguaensis, 4,816 ft.; Amphistigina, 5,150 ft.; and Operculina, 5,611 ft.

Balcones Fault-Line Discovery

In the Balcones fault-line district and located 1½ miles northeast of the Salt Flat field, Caldwell County, Wiegand Brothers, 1 W. C. Hill, J. D. Rains Survey, opened production from the Austin chalk formation when it was completed for an initial production of 208 bbl. per day flowing through a ¼-in. choke. Shut-in casing pressure was 440 lb., and the oil tested 35.4°. This well was drilled to a total depth of 2,700 ft., and 5½-in. casing was cemented at 2,330 ft. Top of the Austin chalk was logged at 2,339 ft., with saturation from 2,347-70 ft. Base of the chalk was logged at 2,647 ft., and top of the Buda lime was cored at 2,668 ft.

W. J. Walton Drilling Co., 1 Tuerpe, a promising wildcat located about 8 miles southwest of Atascosa in Atascosa County, is drilling in Buda lime below 2,707 ft., and continues to log encouraging showings. The base of the Austin chalk was logged at 2,597 ft., and a cavity, drilled at 2,555-65 ft., showed oil in the pits. The Buda lime was topped at 2,630 ft., and carried a slight showing of heavy black oil at 2,630-60 ft. A 65-minute drill-stem test at 2,631-60 ft. recovered 30 ft. of drilling mud, with a slight show of oil. Austin chalk, with a good show of oil, was cored the previous week at 2,400-43 ft., and the well is expected to be drilled to the Edwards lime before the section is tested.

Lee County Test

Fred Pederson, 1 Irene Brown, one of the deepest tests ever drilled in the Balcones fault-line district, and located in Lee County, continues to attract attention as it drilled in sand below 8,700 ft. A streak of sand which drilled 9 ft. in 12 hours was logged at 8,765-74 ft., and while this apparently is not a soft sand it is softer than that which was previously drilled in the Travis Peak which required 12 hours per foot. Some of the cuttings from 8,765-75 ft. showed a fair cut on an ether test, but no odor of oil was detected in the samples. The well was shut in overnight and there was sufficient gas accumulated in the mud the next day to make a small flash when lighted. It is believed that the showing of gas is coming from the Travis Peak as 5½-in. casing was previously cemented 8,201 ft., which cuts off the oil that was previously encountered in the Edwards lime section.

Wade City-Orange Grove Field

H. R. Smith, 1 Thiel, a possible pool opener or a major extension to the Wade City-Orange Grove field, Jim Wells County, flowed at the rate of 20 bbl. of fluid per hour through a ¼-in. choke of which 3 bbl. was oil and the balance salt water. Drilled to a total depth of 5,339 ft., 5½-in. casing was cemented at 4,970 ft., and the well is testing through perforated casing at 4,920-26 ft., and at 4,931-37 ft. It is possible the salt water is due to a faulty cementing job as the mud in the casing dropped 30 ft. when the casing was perforated. The well showed favorable on a drill-stem test, and the well is expected to be killed and recompleted.

In Duval County, and 1½ miles east of the Driscoll field, Continental Oil, 1-B Driscoll, recovered salt water when tested through perforated casing at 3,880-85 ft., and the hole is being plugged back to test and at 2,500 ft. Further development of the west side of the Hoffman field is anticipated following the completion of Gilcrease, 1 Salazar, completed as a dry gas well from sand at 2,603-13 ft.

Humble Oil & Refining Co., 1 Duncan, about 7,800 ft. west of the discovery well of the East Flour Bluff field, Nueces County, is expected to be killed and recompleted after the well flowed 58 bbl. of fluid per day through a ⅛-in. choke. Tubing pessure was 2,150 lb., and shut-in casing pressure 2,500 lb. A shake-out test showed 50 per cent salt water and 50 per cent oil. The well was drilled to a total depth of 7,075 ft., and is being tested through perforated casing at 6,794-6,802 ft. Approximately 1,300 ft. southwest of the discovery well. The same company is preparing to test No. 1-E State, which cored sand showing oil and gas at 6,795-6,811 ft., the total depth and 5½-in. casing was cemented on bottom.

Nueces County Wildcats

Locations for two wildcats were made in the county. Southern Minerals Corp. is rigging up for No. 1 W. D. Bluntzer, 6 miles north of the town of Banquette in the Casa Blanca grant, while H. H. Howell staked location for No. 1 Walter Schultz, a projected 7,200-ft. test located in the Ross Peters Subdivision 1, Section 2, Block 6.

Additional development for the Midway field, San Patricio County, is anticipated following the completion of Stanolind Oil & Gas Co., 1 Ivey, 1 mile north of production, which is flowing at the rate of 128 bbl. of fluid per day through a ⅛-in. choke. Five per cent of the fluid was reported as salt water. Drilled to a total depth of 6,503 ft., the hole was plugged back to 5,354 ft., and production was obtained by perforating casing.

East of Hebronville, Jim Hogg County, Humble Oil & Refining Co. has logged encouraging showings in 1-C Mestena Oil & Gas Co. Sand and sandy shale with an oil odor was cored at intervals from 5,371-5,616 ft., and the well is coring ahead in sand.

A mile-northeast extension to the Rincon field, Starr County, was assured as Complete Oil Well Service, Inc., 1 Yzaguirre, flowed an unestimated amount of gas and a small amount of brown oil through a ⅛-in. choke from perforated casing at 4,612-18 ft. Tubing pressure was 825 lb., and casing pressure 1,350 lb. The well was drilled to a total depth of 5,256 ft., and previous testing at 4,896-4,904 ft., 4,930-40 ft., and 4,716-24 ft. recovered distillate, gas, and water. Location is in Survey 227 on a farmout lease from Sun Oil Co.

SOUTHWEST TEXAS COMPLETIONS

CORPUS CHRISTI DISTRICT

Aransas-San Patricio Counties

McCampbell field: Puertora Petroleum, 1-21 Losoya, perf. casing 7,110-17½ ft., 152 bbl., 7/32-in. choke.
Southern Minerals, 2 Porterfield, perf. casing 7,121-29 ft., 75 bbl., 5/32-in. choke.
Texas Atlas, 1-39 Conn-Brown, perf. casing 7,117-22 ft., 85 bbl., 7/64-in. choke.

Karnes County

North Pettus field: Magnolia, 20 Porter, 3,748 ft. Dry.

Nueces County

Clara Driscoll field: H. D. & H. Oil, 1 Vorwerk, sand 5,355-61 ft., 14 bbl., jetting.
Minnie Bock field: Windsor, 6 Howze, perf. casing 3,816-18 ft., 37 bbl., 5/16-in. choke.

Refugio County

Refugio field: Morgan Minerals, 9-D Mitchell, perf. casing 5,183-87 ft., 113 bbl., ⅛-in. choke.

San Patricio County

East Plymouth field: Texon Royalty, 1 Roots, perf. casing 4,820-23 ft., gas well.

Victoria County

Coletto Creek field: A. Plummer, 4-A Terrell, perf. casing 4,510-15 ft., gas well.
McFaddin field: Houston, 6 Fagan, sand 4,398-4,407 ft., 81 bbl., ⅛-in. choke.

LAREDO DISTRICT

Duval County

Casa Blanca field: Adelon Oil, 5-A Martin, 1,300 ft., temporarily abandoned.
Adelon Oil, 7-A Martin, 1,153 ft., temporarily abandoned.

Jim Hogg County

Colorado field: Humble, 18 Atwood, 3,100 ft., 97 bbl., 7/64-in. choke.
Humble, 16 King, 3,005 ft., 182 bbl., 7/64-in. choke.
V. F. Neuhaus, 2-D Trevino, 3,050 ft. Dry.
Sun, 5 Thaxton, sand 2,950-66 ft., 162 bbl., 7/64-in. choke.

Starr County

Hayden field: Clopton & Mitchell, 3 Oberholtzer, 2,676 ft., gas well.
Clopton & Mitchell, 1 Seabury, sand 1,339-48 ft., gas well.
Margo field: T. E. Stephens, 3 Guerra, 477 ft. Dry.
Rincon field: W. R. Davis, 32-B Slick, perf. casing 4,180-95 ft., 235 bbl., 7/64-in. choke.

Webb County

Adami field: Humble, 10 Yeager, 1,012 ft., 20 bbl., pumping.
Glen field: Holland & Smith, 7 Bruni, sand 2,184-90 ft., 260 bbl., pumping.
Wildcat: H. E. Hall, 1 Slater, 1,477 ft. Dry.
Glenda, 1-A Salvdirar, 1,104 ft. Dry.

Zapata County

Blas Uribe field: T. J. Murray, 1 Bruni, 948 ft. Dry.

Duval County

Wildcat: W. L. Goldston, 1 Vaello, 4,506 ft. Dry.
Milam Drilling, 1 Valerio, 4,860 ft. Dry.

SAN ANTONIO DISTRICT

Bastrop County

Riddle field: Ogden & Riddle, 2 Bunton, 1,828 ft. Dry.
Wildcat: Marts & Beaven, 1 Edmondson, 2,611 ft. Dry.

Bexar County

Gas Ridge field: Southwest Drilling, 2 Covell, 412 ft., 2 bbl., pumping.

Caldwell County

Luling field: Leroy & Johnson, 2,170 ft., 26 bbl. oil and 90 bbl. water, pumping.

Guadalupe County

Elm Creek field: P. G. Rouse, 6 Lenz, 1,270 ft. Dry.

Gonzales County

Wildcat: Encino Prod., 1 Zavadil, 3,100 ft. Dry.

Medina County

Wildcat: B. C. Calvin, 1 Chandler, 1,062 ft. Dry.

McMullen County

Wildcat: W. F. Ashby, 1 Enlow, 1,310 ft. Dry.
Wildcat: F. R. Williams, 1 Nueces Land & Livestock, 1,710 ft. Dry.

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Among the Drilling

HARRY L. EDWARDS Drilling Co. received contract from Salt Dome Oil Corp. for an interesting wildcat, to be drilled about 7½ miles offshore from Aransas County in Aransas Bay, Texas. A canal is being dredged to location, and rig will be moved in within the next few weeks. Contract was also received from L. P. Luse for a deep test on the Esperson dome, Liberty County, while another rig is being moved to the Anse La Butte field in St. Martin Parish, Louisiana, for W. L. Goldston. Two other operations are reported at Old Ocean and New Iberia fields for Harrison & Abercrombie and Midstate Oil Co.

ARROW Drilling Co., Tulsa, is nearing the 5,700-ft. pay in a test being drilled for British American Oil Producing Co. in the Seay field of Montague County, North Texas. It is the No. 2 Martin, a north outpost to the field and located in Section 27, Block 4, H.&T.C. Survey.

F. B. PAINE Drilling Co., Dallas, Tex., has taken over from Frank Shackelford, also of Dallas, his wildcat test, No. 1 Oliver in Van Zandt County, eastern Texas, and is preparing to drill ahead to a 4,500-ft. contract depth. The test is about 3 miles northwest of Grand Saline and will seek production from the Woodbine sand. Surface pipe was set several weeks ago at 54 ft. and work was suspended. The deepening will start immediately.

NICKLOS Drilling Co. spudded Continental Oil Co.'s No. 1 Davis, a projected deep test located near League City, in Galveston County, Texas. Two rotaries are running in the Ville Platte field, Evangeline Parish, Louisiana, for same company, while drilling is under way at Wax Bayou and Horseshoe Bayou fields, St. Mary Parish, for the Texas Co. Another rig is being used on a workover job in the Tepetate field for Continental Oil Co.

CRON & GRACEY have one rotary running in the Lake Long field, La Fourche Parish, Louisiana, for Fohs Oil Co., while another operation is reported in the Grand Isle district for Shell Oil Co., Inc.

AL BUCHANAN Drilling Co. is testing H. R. Cullen's No. 1 Washburn in La Salle County, which looms as the discovery well of another Wilcox sand producing field for the Southwest Texas district. The well was drilled to a total depth of 8,300 ft., and is flowing pipe-line oil while testing sand at a plugged-back depth of approximately 5,400 ft. Another rotary is running for the operator, being No. 1 Wildenthal, located near the town of Cotulla in La Salle County.

E. J. GRACEY received contract from Shell Oil Co., Inc., for a test to to drilled in the new Lolita field, Jackson County, Texas. Two other operations are reported for the same company at Lovells Lake and Clam Lake fields in Jefferson County.

E. W. TURNER, contractor of Ada, Okla., was moving in machinery at the close of the past week for a deep wildcat in Red River County, eastern Texas. It will be drilled for J. F. Morrissey and associates of Fort Worth, Tex., and will be No. 1 A. F. Tyler, in the James Miro Survey. Contracted to 5,000 ft., a 122-ft. derrick has already been erected. It will seek production from the Woodbine sand and is on a 5,000-acre block.

ZEPHYR Drilling Co. has started its second wildcat in Kay County, Oklahoma, at 1 State, NE NW SW 13-26-2w, near the old Hubbard pool, on a lease bought at a recent School Land Commission sale. The company was drilling below 3,100 ft. at its other Kay County wildcat, 1 Morrell, 8-28-4e, and was looking for Mississippi lime.

ALLEN & MORRIS have moved a rotary to Orange Grove field, Jim Wells County, Texas, for McElvain's No. 2 Blaschke. Another producer was completed in the La Rosa field for Coronado Corp., and the rig is being moved to a new location. Two other operations are reported in the Bruni field for American Liberty Oil Co., and at the Agua Dulce field, Nueces County, for Agua Dulce Oil Co.'s No. 6 Talbert.

A. Z. SKEETERS, drilling contractor of Kilgore, Tex., has been awarded contract by Max Agress of Dallas, Tex., for a wildcat to be drilled on a 10,000-acre block southwest of Linden in Cass County, Texas. The block extends in the J. Brown, A. Hampton and M. B. Frazier surveys, and the test is to be drilled on a subsurface-geology prospect. Pits have been dug and location cleared, and rigging up was started over the week end. To seek the Woodbine, expected around 3,500 ft., the well is styled No. 1 Clark & Boice Lumber Co. Location is spotted in the southwest corner of Lot

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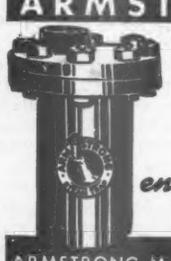

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2, Clark & Boice subdivision, Benjamin Hawkins Survey. Location is 5½ west and 4½ miles south of Linden.

HERNDON Drilling Co. gave up as a bad job its 1 Montgomery, CEL SW 13-27-13w, wildcat 1½ miles southeast of the Iuka pool, Pratt County, Kansas. It found Arbuckle lime at 4,441 ft., drilled to total depth of 4,458 ft., perforated casing and tested upper zones and had nothing showing but water.

L. T. BURNS, contractor and operator of Wichita Falls, Tex., is rigging up on No. 1 Calloway, 1,500 ft. from south and 330 ft. from west lines of Block 9, Hopkins C.S.L., Abstract 176, and about 1 mile south of Bluegrove in Clay County, Texas. The test, an old hole, was abandoned more than a year ago at a depth of 5,356 ft. and the operator plans to deepen to 5,800 ft.

HOUSH & THOMPSON are rigging up in the Greens Lake field, Galveston County, Texas, for Sun Oil Co.'s No. 10 Hughes. Another well is starting in Eola field, Avoyelles Parish, Louisiana, for Gulf Oil Corp. Drilling continues with three rigs at San Jacinto County for Harrison & Abercrombie; the Hull field, Liberty County, and at Hackberry for Gulf Oil Corp.

COMPLETE Oil Well Service Co., Inc., extended the Rincon field, Starr County, Texas, about 1 mile northeast with the completion of No. 1 Yzaguirre. The well has been in the process of completion for the past 2 weeks and final completion was made in sand at 4,612-18 ft., where it is flowing an unestimated amount of gas and a small amount of brown oil.

FAILING Exploration & Drilling Co., Houston, Tex., has been let contract by Humble Oil & Refining Co. for a new wildcat in Scurry County, West Texas. It is No. 1 C. E. Land, SE Section 247, Block 97, H.&T.C. Survey, 6 miles west of Snyder. The test is on a large Humble block which showed a "high" when shot with seismograph about a year ago.

ROWAN Drilling Co., of Wichita Falls, Tex., was shutting off water below 3,405 ft. at its No. 1 Nora Sloan in the Knight pool of Young County, North Texas, at last reports. A good show of oil was encountered at 3,328-60 ft. and coring was continued at 3,370-90 ft. The test is located east of the Tex-Tor Oil Co. and McLester No. 3-C J. F. Knight in the Williams Mains Survey, Abstract 1740. The latter well, in the Knight Survey, last week was completed for 1,033 bbl. in 19 hours through open 2-in. tubing at 3,741-73 ft.

W. T. RAPP, Shawnee, Okla., contractor, was making fast time at the F. R. Henson, 6 Layne, NE SW NW 30-5-5, in the Bebee field, Pontotoc County, Oklahoma. In less than 1 week he spudded, drilled to 2,426½ ft. and set 7-in. casing at 2,419 ft., and was waiting.

T. A. FERRELL Drilling Co. has contracted to drill 10 wells for Wayne Pointing, Illinois operator, in the vicinity of the Pointing 1 Rohner, SW NW NE 31-2n-1e, wildcat in the Junction City area, north of Centralia, Ill. The No. 1 Rohner was bottomed at 3,192 ft., found 14 ft. of saturated pay in Witcher sand and was looking like a certain producer. Six 1,000-bbl. tanks were being moved on location.

GENE BURKE, Hobbs, N. M., contractor and operator, has started his third wildcat in southwestern Oklahoma at 1 Estes, SW SW NE 34-3n-19w, northeast of Altus, Jackson County. Location was based on soil analysis on a 2,000-acre block. Contract depth is 2,500 ft. Burke recently drilled two shallow dry holes in southern Kiowa County.

R. G. Drilling Co. and Clark at their wildcat northeast of Megargel in Archer County, North Texas, at the week end were attempting to remove stuck drill pipe at a depth of 4,975 ft. Location of the test, No. 1 Goldsmith, is in Block 6, J. L. Anderson subdivision.

WISE Drilling Co. is seeking deep production at No. 1 Berryman, SW NE NW 10-10-8, on the east edge of the old Cromwell pool, Seminole County, Oklahoma. The contracting firm has leases on the deep rights in the area and will test Wilcox sand horizons.

PAUL DORAN, Vandalia, Ill., contractor and operator, set a fast record for the state recently when he started his 1 Lloyd Smith, NE SE SE 9-6n-2w, Mulberry Grove Township, Bond County, Illinois, one night and by noon of the third day had completed it as a dry hole, defining the southern limits of the current Benoist sand development in that county.

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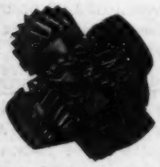

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Three North Louisiana Tests Show Encouraging Results

By
GEORGE WEBER

SHREVEPORT, La., Aug. 19.—A wildcat in southern Caddo Parish is testing horizons which showed oil on previous drill-stem tests, and a second wildcat has a reported show of oil in Red River Parish. La Salle Parish is being watched, with Olla development, and a show of oil in a 5-mile south field extension to Olla. Arkansas activity remains quiet as the Fouke field, Miller County, was further defined on the east by another failure.

NORTH LOUISIANA

In La Salle Parish, Peterson Petroleum Corp. last week perforated casing in No. 1 Tremont Lumber Co. and tested oil and salt water. The wildcat is located 5 miles south of the Olla south extension, and 7 miles south of Olla proper. The first tested an estimated 10,000,000 cu. ft. of gas through perforations at 3,160-63 ft. in the Wilcox. The well was killed and re-perforated at 3,036-39 ft. after which it began flowing an estimated 7 bbl. per hour of fluid, 30 per cent salt water, through a ¼-in. choke. Tubing pressure of the test is 350 lb., and casing pressure 1,200 lb. The oil is about 33.1 gravity and operators have closed in the well awaiting erection of storage. If successful in bringing in the well, the operators will add a fourth area productive of oil or gas in the vicinity of Olla. The three pools now producing consist of Olla proper, producing oil, a northern gas well and a southern extension or separate pool, producing oil and gas. All are producing from sands deep in the Wilcox section, as contrasted with other Wilcox production, which is located near the top of the formation.

Operators are watching the J. M. Conner, 1-A Williams in southern Caddo Parish near Spring Ridge as it begins testing prospective sections previously tested. The wildcat is bottomed at 6,500 ft. and has 7-in. casing set well up the hole at 5,279 ft. First perforations were shot in the casing string at 5,120-35 ft. and the well is swabbing at that level without having reported any oil shows to date. If unsuccessful at the present testing level, operator will perforate and test sand bodies at 5,138 and 5,152 ft. which showed oil and gas on drill-stem tests during drilling of the wildcat.

In Red River Parish, the Thornton & LaCroix, 1 Prudential Life Insurance Co., 31-11-9, has a reported show of oil at 1,224-51 ft. but at latest reports was drilling below 1,300 ft.

Most of the active Claiborne Parish wildcats have not yet reached critical depths, but at the present rate of drilling the Union Producing, 1-A Meadows, north of Lisbon, and V. A. Hardin, 1 Valentine, 9 miles southwest of Lisbon will be at interesting depths within the next week. The Ohio Oil Co. is coring below 8,600 ft. in the lower Marine formation without having encountered any oil shows to date. A new wildcat for Claiborne Parish, A. D. Veary, 1 J. A. Harris has been staked 1½ miles southeast of Athens. It will test the Travis Peak formation.

NORTH LOUISIANA FIRST REPORTS

Bellevue—Bossier Parish

Tide Water, 6 Lodwick Lumber Co...SW SE 10-19-11.
Tide Water, 7-J Lodwick.....SW SW SE 10-19-11.

Caddo—Caddo Parish

W. B. Johnson Drilling, 1 Stiles.....22-21-16.
R. C. McElmury, 1 Files.....SW 32-21-15.
Savage et al, 4-A Mansfield.....SE 1-20-16.
Texas, 11 Marby.....SE SE 15-21-15.
Tiger Oil & Gas, 2-B Crystal fee.....SW 24-21-16.
J. Z. Werby et al, 1 Darnell.....NW 17-22-6.

Wildcat—Claiborne Parish

A. D. Veary, 1 J. A. Harris.....
1,050 ft. E, 100 ft. N of SW cor. 17-19-6.

Bull Bayou—De Soto Parish

George Lilly et al, 1 Albritton....SE NW SE 35-12-11.

NORTH LOUISIANA COMPLETIONS

Bistineau—Bienville Parish

Union Producing, 1 Havis Unit, 150 ft. SE cor. NW NW 11-16-10, 50,000,000 cu. ft. gas, T.D. 5,795 ft., set 7-in. casing 5,436 ft., perf. 5,260-5,312 ft.

Caddo—Caddo Parish

C. J. Brown, 1 Glassell, 25-21-15, 15 bbl., T.D. 1,610 ft.
Lloyd A. Farr, 6 Stiles, 17-21-16, pumping 25 bbl., T.D. 1,034 ft.
F. G. Holcomb, 1 Sims, 3-20-16, salt water, T.D. 1,007 ft.
Providence Oil, 6 Bostwick, 13-22-16, salt water, T.D. 2,624 ft.
Stanolind Oil & Gas, 15 Slattery estate, 21-21-15, pumping 50 bbl., T.D. 1,568 ft.
E. A. Stiller et al, 4 Stiles, 28-21-16, pumping 5 bbl., T.D. 2,401 ft.

Monroe—Ouachita Parish

Interstate Natural Gas, 100 fee, 44-19-3e, 3,000,000 cu. ft. gas, rock pressure 950 lb., T.D. 2,209 ft.

Cotton Valley—Webster Parish

Hunt Oil, 2 Scott, 1,980 ft. N, 50 ft. E SW cor. 20-21-9, D sand 8,536-42 ft., salt water, Bodcaw sand 8,619-70 ft., oil, set 7-in. casing 8,720 ft., perf. 8,640-66 ft., 861 bbl., ⅜-in. choke, tubing pressure 750 lb., casing pressure 750 lb., T.D. 8,722 ft.

Estimated Daily Production

Estimated daily gross production for week ended August 16:

NORTH LOUISIANA

	Barrels
Bellevue	470
Caddo light	5,695
Caddo heavy	2,180
Converse	525
Cotton Valley	*13,525
Cross Lake	3,285
De Soto and Red River	1,025
Elm Grove	315
Haynesville	2,655
Holly	75
Homer	2,820
Lisbon	3,950
Olla	2,460
Pleasant Hill	95
Rodessa	18,750
Sarepta-Carterville	†295
Sligo	1,885
Sugar Creek	20
Urania	2,470
Zwolle	1,665
Total	64,160

Rodessa, Texas, 14,240 bbl.

SOUTH ARKANSAS

Atlanta	2,620
Big Creek	100
Buckner	2,365
Champagnolle	1,160
Dorcheat	1,100
El Dorado	1,655
Fouke	280
Lewisville	625
Lisbon	220
Magnolia	21,500
McKamie	340
Miller County	350
Nevada	580
Nick Springs	475
Rodessa	1,930
Schuler	18,400
Smackover light	1,660
Smackover heavy	13,655
Stephens	540
Troy	1,220
Urbana	1,650
Village	1,185
Total	73,610

*3,680 bbl. is distillate.
†35 bbl. is distillate.

NORTH LOUISIANA WILDCATS

Bienville Parish

Union Producing, 1 Tooke Unit, 100 ft. SW C SE 10-16-10w. First report.

Bossier Parish

H. M. Harrel et al, 1 Porter, 1,370 ft. W, 1,276 ft. S NE cor. 20-17-11. Rigging up.
L. K. McGuffin, 1 Tomlinson, 980 ft. S, 600 ft. E, C 16-18-11. T.D. 1,195 ft., top Nacatoch 1,167 ft., S.D. 1,220 ft.
R. L. Reese et al, 1 Bellevue Ld. Co., 170 ft .E, 365 ft. N, 27-20-11. D.S.T. 2,902-13 ft., tested salt water, fishing drill stem 3,035 ft.
R. W. Crosby, 1 W. E. Glassell, NW SW NE 11-19-15. First report.

Caddo Parish

J. M. Conner, 1-A Williams, 334 ft. N, 986 ft. W, SE cor. NE 3-15-15. Set 7-in. casing 5,279 ft., perf. 5,120-35 ft., T.D. 6,500 ft., swabbing.
Gehrig, 1 Colored Methodist Church, 637 ft. N, 1,626 ft. E, SW cor. 35-18-14. Set 5½-in. csg. 5,626 ft., perf. 5,604-26 ft., testing.

Claiborne Parish

J. D. Caruthers, Tr., 1 Simmons unit, C N½ SW 2-20-5w. Location.
V. A. Hardin, 1 Valentine, 593 ft. E, 660 ft. S, NW cor. 31-20-6w. Coring 2,600 ft.
Ohio, 15 G. W. Taylor, Acct. 1, 100 ft. S and W, C SE 15-23-8. Top Bodcaw sand 7,654 ft., ran electrical survey, reaming down, hard sand 8,635 ft.
Haynes B. Owenby, 2 L. E. Ozley fee, 490 ft. N, 660 ft. E, SW cor. NW 33-20-5. Drilling 2,523 ft.
Union Prod., 1-A Meadows et al, C NE 18-21-4. 16-in. casing 326 ft., set 10¾-in. casing 3,591 ft., top massive anhydrite 3,762 ft., drilling lime and shale 4,764 ft.

De Soto Parish

R. C. Swayles, 1 Jackson, 330 ft. E, 200 ft. N, SW cor. NW SW 36-12-14. Rigging up.
Union Prod., 1-B M. E. Garrett, 1,320 ft. N, 1,980 ft. W, SE cor. 33-12-16. Rigging up.

Franklin Parish

J. B. White et al, 1 Dailey, 1,170 ft. N, 2,490 ft. W, SE cor. 1-11-6. S.D., no show 3,016 ft.

Grant Parish

H. L. Hunt, 1-A Goodpine, 100 ft. N, 220 ft. E, C SW NW 10-7-3e. First report.
Peterson Pet. Corp., 1 Swope, 182 ft. N, 85 ft. W, SE cor. NW SE 18-9-1e. Plugging off salt water 1,609 ft.

La Salle Parish

Placid Oil, 19 La. Central, NE NW 26-10-2e. First report.
Placid Oil, 24 La. Central, SE NE 24-10-2e. Perf. 2,188-2,220 ft., tested salt water., showing oil and gas, squeezed 2,430 ft.
Placid Oil, 26 La. Central, SE NE 25-10-2. Set 7-in. casing 2,410 ft.
O. K. Allen, Jr., et al, 1 Breedlove, SW NE 32-11-3e. Top Wilcox 1,600 ft., T.D. 2,540 ft., S.D.
Arkansas Fuel Oil, 1-A Kees, 609 ft. N, 667 ft. E, SW cor. NE SW 7-10-3e. Set 7-in. casing 2,252 ft., oil sands 2,202-04 ft. and 2,223-25 ft., perf. 2,225-30 ft., tested salt water, reperf. 2,225-30 ft., testing.
Arkansas Fuel Oil, 1 W. H. Mills, 615 ft. N, 665 ft. W, C 13-10-2e. Set 10¾-in. casing 191 ft., drilling 2,073 ft.
Peterson Pet. Corp., 1 Tremont Lbr., NE SW 25-9-2e. T.D. 4,020 ft., perf. 3,160-63 ft., tested estimated 10,000,000 cu. ft. gas, rock pressure 1,325 lb., killed well and perf. 3,036-39 ft., flowing estimated 7 bbl. per hour, ¼-in. choke, 30 per cent salt water, T.P. 350 lb., C.P. 1,200 lb., 33.1 gravity, S.I. for storage.

Red River Parish

Thornton & La Croix, 1 Prudential Life Ins. Co., 2,160 ft. S, 440 ft. E, NW cor. 31-11-9. Topped Nacatoch sand 1,190 ft., drilling 1,304 ft.

Sabine Parish

Shell, 1 Pickering Lumber Co., NE SW 30-4-12. Drilling 7,260 ft.

Union Parish

Tiki Exploration Co., 1 Jones, 990 ft. NE cor. 30-21-3w. S.D. 3,200 ft.

Webster Parish

Magnolia, 1 G. Wadley, 400 ft. S, 940 ft. E, NW cor. NE 18-21-9. Drilling shale and lime 3,827 ft.
Midstate Oil, 1 Giddens unit, 282 ft. N and W, C SW NE 30-21-9. D sand 8,556-69 ft., salt water, Bodcaw sand 8,649 ft., oil, set 7-in. casing 8,678 ft., T.D. 8,680 ft.
Hunt Oil, 1 Crawford et al, SE cor. NW SE 30-21-10. Set 13⅜-in. casing 615 ft. (cor.), set 9⅝-in. casing 5,622 ft., T.D. 6,012 ft.

ARKANSAS

Arkansas activity continues to decline. During the week the state's most interesting test, Gray & Wolfe, 1 D. L. Friday, an east outpost to the newly discovered Fouke field, Miller County, failed to find commercial production in the Paluxy sand and was abandoned at 3,752 ft. The test had a show of oil at 2,980-3,000 ft.

ARKANSAS FIRST REPORTS

Nick Springs—Union County

Root Petroleum, 1 C. T. Grace, 150 ft. SW cor., NW SE 31-17-14.

ARKANSAS COMPLETIONS

Wildcat—Miller County

Gray & Wolfe, 1 D. L. Friday, NW E½ SW 6-17-26. Dry, T.D. 3,752 ft.

Troy—Nevada County

Berry Asphalt, E W. E. Meadows, NW SW 4-14-20. Pumping 35 bbl. oil, 5 bbl. salt water, T.D. 1,184 ft.

Wildcat—Sevier County

R. A. McArthur, 1 Bell estate, 20 ft. SE cor., SE SW 29-9s-32w. Dry, T.D. 785 ft.

ARKANSAS WILDCATS

Clark County

J. H. Coker and J. P. Grieves, 1 McClellan, NW NW SE 11-20-21. S.D. 1,603 ft.
W. S. King, 1 N. Ross, 640 ft. S, 359 ft. W, NE cor. S½ SW 3-10-21. S.D. 2,522 ft.

(Continued on Page 99)

By
R. MARNE SANFORD

Ward and Pecos Discoveries Seek Lower and Better Pays

MIDLAND, Tex., Aug. 19.—With no new fields discovered in the Permian basin area during the past week, attention turned to the many wildcat tests active in both West Texas and southeastern New Mexico. The majority of the recently staked wildcats in central Eddy County, New Mexico, were nearing the crucial stages as the week closed.

Proving somewhat of a setback for the southern part of the West Texas portion of the Permian basin, both of the new discoveries of the past 2 weeks, one each being in Pecos and Ward counties, were being deepened below their respective pay levels at the close of the week. Sulfur-water increase was given as the reason for deepening Pecos County's recent discovery at a deeper level in the Pecos Valley (low-gravity) field, while prospects of another and more prolific pay prompted the deepening of Sinclair Prairie, 1 Davis, last week's discovery in Ward County.

SOUTHERN WEST TEXAS

Ward County's strike of about 10 days ago, Sinclair Prairie, 1 Davis, Section 32, Block 4, H.&T.C. Survey, 3 miles southeast of the Shipley field, pumped on official gage early in the week, a total of 52 bbl. of oil in 24 hour, naturally. The total depth at the time was 2,375 ft. with the productive sand zone in the dolomite being topped at 2,355 ft. The company gave as reason for deepening the discovery the fact that it was originally contracted to the 3,000-ft. Shipley field pay. The shallow 2,355-ft. pay was not expected to be found and for this reason the wildcat could not be completed at this depth but must carry out its contract to the Shipley lime. As the week closed the test was drilling below 2,472 ft., having topped the salt water level at 2,451 ft. The test was reported carrying about 1,200 ft. of fluid in the hole, about 500 ft. of which was oil from the 2,355-ft. zone.

Pecos County's discovery in the Pecos Valley (low-gravity) field 2 weeks ago gaged mainly sulfur water on a series of tests during the past week. It is Ward Pecos Petroleum, 6-DE Pecos Valley (formerly No. 5-E), located in Section 36, Block 3, H.&T.C. Survey, in the western part of the field. The well had indicated a deeper zone when it flowed an estimated 300 bbl. daily, together with about 85 per cent water, from pay drilled from 2,043-49 ft. With 5½-in. casing set on bottom at 2,349 ft. and through 6 ft. of perforated casing immediately below packer set at 1,998 ft., the well showed mostly sulfur water with only a small amount of oil when swabbed down. After deepening from the barren zone of regular production in the Pecos Valley field, the exploratory test found a zone of flowing sulfur water from 2,040-43 ft. With the oil zone logged from 2,043-49 ft., it is believed that the sulfur water is coming from above the pay level and that it may be successfully shut off. Further testing was in progress as the week closed.

New Wildcat Tests

The spudding of a new wildcat test in Crockett County was delayed until road is completed to the location. It is Moore Exploration Co. and Olson Oil Co., 1 Clara Couch, extreme western part of the county and on a 500-acre tract out of the south part of Section 52, a staggered section on the Pecos River. It is contracted to 2,000 ft.

Contract has been let and materials were being moved in for a new wildcat test in Scurry County by Humble Oil & Refining Co. It is to be No. 1 C. E. Land, SE Section 247, Block 97, H.&T.C. Survey. It is about 5 miles southeast of Coffield & Guthrie, Inc., 1 Mooar, active test in Section 334, Block 97, H.&T.C. Survey, which is nearing contract depth at 4,500 ft.

Some attention turned during the week to the extreme southeastern part of the West Texas district. Wildcats in two counties, Sutton and Schleicher, both reported new activity. In Sutton County M. C. Moore and associates were preparing to reopen and acidize a wildcat on the G. Allison lands, which has been abandoned since 1929. It is located in the SW NE Section 44, Block K, G.H.&S.A. Survey, 20 miles northeast of Sonora. It is bottomed at 4,900 ft. with shows of gas reported to have been drilled at about 4,645 ft.

In Schleicher County Harold Opp, 1 Jackson, Section 41, Block LL, G.H.&S.A. Survey, hailed as a field discovery in September of 1939 when it made 25 bbl. daily from the Cisco sand at 4,049-61 ft., was drilling below 4,894 ft. toward the 4,900-ft. level, its new contract depth.

SOUTHERN WEST TEXAS COMPLETIONS

(24-hour gages)

Crane County

Jordan field: Fogelson, 3-C University, 246 bbl., 3,424-3,655 ft.
Fogelson, 4-C University, 132 bbl., 3,375-3,656 ft.
Snowden & McSweeney, 7-X University, 229 bbl., 3,521-34 ft.
McElroy field: Gulf, 222 McElroy, 1,222 bbl., 2,740-2,931 ft.

Ector County

Johnson field: Delaney, 2-B Johnson, 1,651 bbl., 4,045-4,150 ft.
Great Western Prod., 4 Johnson, 1,085 bbl., 3,910-4,125 ft.
Sinclair Prairie, 5-C Johnson, 503 bbl., 4,026-4,185 ft.

Upton County

McElroy field: Continental, 16 Burleson, 35 bbl., 2,191 ft., T.D., old well drilled deeper.

Ward County

Acme Oil, 2 Shell-Sloan, 87 bbl., 2,870-3,023 ft.

Winkler County

Ralph Lowe, 1 Campbell, 457 bbl., 3,094-3,283 ft.
C. V. Lyman, 2 Brown & Altman, 23,185,000 cu. ft. gas, 2,365-2,495 ft.
Sam Weiner, 4 Jenkins, 185 bbl., 3,290-3,405 ft.

WILDCAT OPERATIONS

Crane County

Gulf, 1-F University, SE SE Sec. 22, Blk. 31, University Sur. Drilling 3,580 ft.

Crockett County

Moore Exploration and Olson Drilling, 1 Couch, W. S. Piggs Sur., first report.

Hudspeth County

Haymon Krupp, 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur., 5½-in. casing cemented at 6,202 ft., drilling 6,218 ft.

Pecos County

Plymouth, 1 Richard Levy, SW cor. Sec. 104, Blk. 8, H.&G.N. Sur. Drilling 6,342 ft.
Taubert, McKee & Siemoneit, 1 Crockett, SW Sec. 4¼, Blk. 3, H.&T.C. Sur. T.D. 2,450 ft., reaming casing.

Sutton County

Domain, 1 G. S. Allison, SW NE Sec. 91, Blk. 9, T.W. &N.G. Sur., Ellenburger lime test. S.D. 1,088 ft.

Upton County

J. F. Slaughter, 1 Porter, Sec. 184, Blk. E, C.C.S.D.& R.G.N.G. Sur. Location.

Ward County

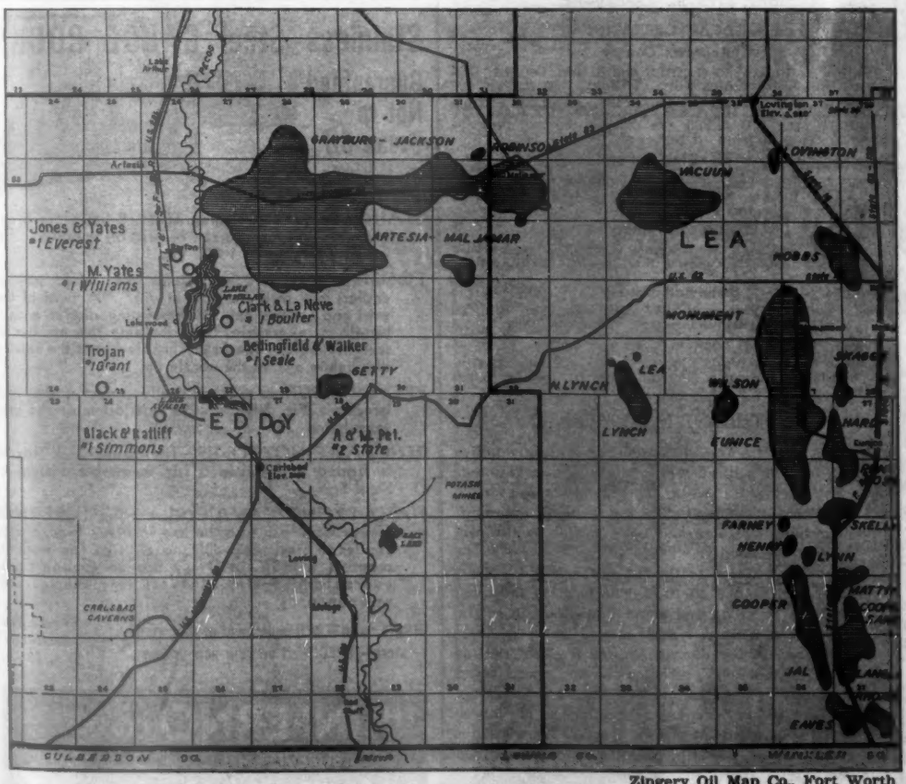
Gulf, 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur., scheduled Ordovician test. Reaming 9,049 ft.
Sinclair Prairie, 1 Wirt Davis, 330 ft. NW, 2,310 ft. SW lines, Sec. 32, Blk. 4, H.&T.C. Sur.; 3,500-ft. test. Drilled saturation 2,355-75 ft., set casing 2,375 ft., pulling casing and preparing to drill deeper to Shipley lime.

Winkler County

Gulf, 136 O'Brien, SE SW Sec. 11, Blk. F, G.&M.M.B. &A. Sur. Water at T.D. 3,187 ft.; P.B. 2,970 ft., pumped 39 bbl. oil with no water in 24 hr., still testing.

NORTHERN WEST TEXAS

Andrews County held the attention in this area as testing continued at a prospective discovery in the southeastern part of the county. It is Texas Pacific, 1-A Midland farms, Section 1, Block 40, T1n, T.&P. Survey. Casing has been cemented at 4,643 ft., old total depth being 4,888 ft. On last gages before casing was run, the test made 2 bbl. of oil and 94 bbl. of water during the last 11 hours of a 48-hour swabbing test.



Zingery Oil Map Co., Fort Worth

Central Eddy County's increasingly active wildcat spot added a new location during the week. Clark & LaNeve, 1 Boulter. This brings the total active wildcats in this area to seven

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Total depth at this time was 4,865 ft., plugged back from 4,888 ft., old depth.

Farther north and in the large and now combined Slaughter-Duggan-Dean field of Cochran and Hockley counties, prospects of a 1½-mile extension were seen at the close of the week. The test indicating the extension is Osage Drilling Co., 1 Blake, Labor 1, League 53, Scurry County School Lands Survey, in the southeastern part of the Duggan area. Pay was encountered at 5,000 ft. and after making 61 ft. of penetration to a depth of 5,061 ft., the test was reported swabbing free oil.

Attempting to extend the Slaughter sector 2½ miles to the north, Whittington, 1 Alewine, Labor 12, League 41, Maverick County School Lands Survey, is bottomed at 4,893 ft. with casing cemented at 4,826 ft. Plug has not yet been drilled.

Dawson County long active wildcat, Ray Albaugh, 2 Robinson, Section 54, Block M, E.L. Survey, was abandoned as a dry hole during the week at a total depth of 5,398 ft., in lime. Increasing amounts of sulfur water were found in drilling from 5,384 ft. to total depth.

NORTHERN WEST TEXAS COMPLETIONS

(24-hour gages)

Andrews County

Emma field: Adams & Bradley, 3 University, 1,204 bbl., 4,285-4,325 ft.

Gaines County

Seminole field: Atlantic, 4-CX Riley, 620 bbl., 5,071-5,321 ft.
Magnolia and Atlantic, 9-219 H. & J., 703 bbl., 5,184-5,260 ft.
Shell, 2 Mann, 920 bbl., 5,042-5,232 ft.
Wasson field: Continental, 6-45 Moore, 662 bbl., 4,930-5,050 ft.

Hockley County

Slaughter field: Magnolia, 1-B Mallett, 751 bbl., 4,985-5,044 ft.
J. W. Murchison, 7 Slaughter, 417 bbl., 4,990-5,050 ft.
S. W. Richardson, 1-B Slaughter, 891 bbl., 4,905-95 ft.

Howard County

Chalk field: Pure, 5 Chalk, 522 bbl., 3,132 ft., T.D.; old well drilled deeper.
Wildcat: M. L. Richards, 1 Cole. Dry. T.D. 3,025 ft.

Stonewall County

Wildcat: Shell, 1 Smith, 581 bbl., 6,012-65 ft., top Wichita Albany 1,328 ft., Cisco 2,540 ft., Noodle Creek 2,818 ft., Canyon 3,625 ft., Palo Pinto 4,700 ft., Strawn 5,151 ft., Mississippian lime 6,005 ft.

Yoakum County

Wasson field: Anderson-Prichard, 5-761 Willard, 1,135 bbl., 4,940-5,197 ft.
Danvers, 2 Comer, 862 bbl., 5,050-5,205 ft.
Danvers, 2 Willard, 220 bbl., 4,995-5,200 ft.
Honolulu, 14-804 Wilder, 920 bbl., 4,960-5,135 ft.
Humble, 2 Armstrong, 977 bbl., 4,915-5,095 ft.
Magnolia, 18 Mahoney, 834 bbl., 4,955-5,175 ft.
Oil Development, 1-38 fee, 1,513 bbl., 4,925-5,025 ft.
Shell, 1 Corder, 817 bbl., 4,890-5,045 ft.

WILDCAT OPERATIONS

Andrews County

Phillips, 1 Embar, 60 ft. from south line, Sec. 31, Blk. 10, University Lands Sur., drilling 2,380 ft.
Texas Pacific, 1-A Midland Farms, NE NW Sec. 1, Blk. 40, Twp. 1n, T.&P. Sur., 5,000-ft. test, T.D. 4,873½ ft., P.B. 4,865 ft., drilling casing plug at 4,625 ft., preparing to test.

Brewster County

J. W. Quinn, trustee, 1 S. L. Strumburg, NW cor. SE Sec. 70, Blk. G, M.K.&T.E. Sur.; 2,500-ft. test, 10-in. casing 990 ft., no report.

Howard County

C. T. McLaughlin, 1 Pete Johnson, NE NE Sec. 34, Blk. 32, Twp. 1n, T.&P. Sur. S.D. 3,431 ft., hit sulfur water.

Stonewall County

Shell, 1 J. D. Patterson, SW NW Sec. 393, Blk. D, H.&T.C. Sur.; Ordovician test, drilling 4,980 ft.

Yoakum County

Sloan & Zook, 1 Waples-Platter, Sec. 565, Blk. 4, Gibson Sur., top Brown lime at 4,340 ft., drilling 5,090 ft.

SOUTHEAST NEW MEXICO

HOBBS, N. M., Aug. 19.—The increasingly active wildcat area in central Eddy County gained another new test during the week. This brings the total to seven wildcat tests active in the general area surrounding Lake McMillan and Lake Avalon in the central part of the county.

The newest addition to the list is Clark & La Neve, 1 Boulter, NE SE NW 23-19-27. The location falls just east of Lake McMillan and about 5 miles south of the Reddingfield & Walker, 1 Seale, active test.

Completions in the district showed a slight decline over the immediately preceding weeks, there being only one new completion recorded in Eddy County, a dry hole, and only seven new completions and three reworked wells recorded in Lea County. Luna County had a dry hole at 1,187 ft., bringing completions to a total of 12.

There were nine new locations in the district, one being a wildcat test in the little-explored Dona Ana County. It was B. C. Armstrong, 1 R. B. Baker, E½ NW NW 4-23s-1e.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

Wildcat: Sanders Brothers, 1 De Temple ..... NW NW 27-19-31
Dry. T.D. 2,761 ft.

Lea County

Maljamar field: Maljamar Oil & Gas, 12-A Baish ..... SW SW 21-17-32
Flowed 200 bbl. naturally, 3,681-4,018 ft.
Carper Drilling, 2 Simon ..... SE NE 29-17-32
Flowed 200 bbl., shot, 3,680-3,810 ft.
Maljamar Oil & Gas, 8-A Baish .....
Flowed 200 bbl., new T.D. 4,103 ft., old well drilled deeper.
Cockburn, 6-A Miller .....SW NW 26-17-32
Made 84 bbl., new T.D. 4,112 ft., old well drilled deeper.
Cockburn, 9-B Baish .....SW NW 27-17-32
Made 100 bbl., new T.D. 4,035 ft., old well drilled deeper.
Vacuum field: Magnolia, 72 State-Bridges ..... SE SE 11-17-34
Flowed 51 bbl., shot, 4,583-4,728 ft.
Arrowhead field: Continental, 9-J-2 State ..... SW NE 2-22-36
Flowed 213 bbl. in 3 hr., naturally, 3,762-3,839 ft.
Cooper field: Culbertson & Irwin, 1 Cooper ..... SW NE 12-24-36
Flowed 55 bbl., shot, 3,495-3,588 ft.
Skelly field: Skelly, 12 Sims .....SW SE 33-22-37
Flowed 212 bbl. in 18 hr., shot, 3,546-3,680 ft.
Mattix field: Trinity Drilling, 2 Mattix .....
Flowed 48 bbl. in 8 hr., shot, 3,392-3,531 ft.

Luna County

Wildcat: O. D. Berry, 2 Berry 33-22-10
Dry. T.D. 1,187 ft.

SOUTHEAST NEW MEXICO ACTIVE WILDCATS

Chaves County

Martin, 1 Stephens ..... NW NE 22-15-29
Old failure drilling deeper, drilling 2,142 ft.

Dona Ana County

Armstrong, 1 Baker .....NW SW 4-23-1
First report.

Eddy County

Beddingfield & Walker, 1 Seale .....SE SE 10-20-27
S.D. 503 ft.
Talmadge, 1 State .....SW NE 24-16-28
Drilling 2,200 ft.
Jones & Yates, 1 Everest .....NE SE 15-18-26
Set casing 620 ft.
Trojan, 1 Grant .....SW NE 33-20-25
T.D. 1,590 ft.; S.D.
Schumacker, 1 Levers .....NE NE 33-16-29
T.D. 2,825 ft., rigging up pump.
J. B. Cowden, 1 State ..... SW SE 3-17-29
Between Root field and High Lonesome, T.D. 2,796

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ft., pumping, estimated 10 bbl., shut in 2,967 ft.
Artesia Drilling, 1 Hoffman.... SE SE SE 14-17-24
Estimated 1,250,000 cu. ft. at 938 ft., S.D. 1,282 ft.
M. Yates, 1 Williams.....NE NW 25-18-26
Location.
Black & Hatliff, 1 Simmons.....SE NW 9-21-25
S.D. 344 ft.
A. & M. Petroleum, 2 State.....NW SE 15-21-17
S.D. 285 ft.
Clark & LaNeve, 1 Boulter.....SE NW 28-19-27
First report.

Lea County

Stanley & Weiner, 1 Saunders .....NE NE 20-21-38
Waiting on cable tools 1,620 ft. (corrected).
Venture Oil, 1 Lowe ..... SW SE 26-13s-37e
6,000-ft. test. Top Yates sand 3,150 ft., preparing to core at 5,322 ft.
Great Western Prod., 1-D State ....SE SE 30-12-32
Rigging up cable tools 1,445 ft.

Otero County

R. H. Ernest, 1 Located Land Co. ..... SE SE 20-25-7
Drilling 3,600 ft.

TEXAS PANHANDLE

AMARILLO, Tex., Aug. 19.—A new wildcat location in Motley County centers the attention of the Panhandle district the past week. It was Humble Oil & Refining Co.'s third deep exploratory test on the large Matador ranch. The test is styled No. 1-C Matador Land & Cattle Co., located 660 ft. from the east and south lines of Section 29, Block J.B., G.B.&C.N.G. Survey.

There were a total of 11 new locations reported for the district and 15 new oil completions. The total aggregate initial potential of the new oil wells was 3,649 bbl.

TEXAS PANHANDLE COMPLETIONS

(24-hour gages)

Carson County

Magnolia, 81 fee, 10 bbl., 3,033-86 ft.
Texas, 14 Cooper, 415 bbl., 3,121-81 ft.
Texas, 13 Quinn, 462 bbl., 3,064-3,121 ft.

Gray County

Magnolia, 4 Morse, 476 bbl., 2,573-2,698 ft.
Sinclair Prairie, 2 Combs-Worley, 53 bbl., 3,005-3,105 ft.
Southern Petroleum, 4 Archer, 72 bbl., 3,185-3,320 ft.

Hutchinson County

Crosbie, Inc., 35 Pitts, 387 bbl., 2,755-2,833 ft.
Texas, 9 Morse, 264 bbl., 3,110-60 ft.
Texas, 30 Lewis, 390 bbl., 2,921-80 ft.
Texas, 36 Lewis, 400 bbl., 2,960-3,025 ft.
Barnsdall, 12 Lewis, 85 bbl., 2,927-75 ft.
Clay Bros., 1 Ethel Smith, 30 bbl., 3,085-3,227 ft.
Kewanee Oil, 44 Lewis-Badger, 145 bbl., 2,937-72 ft.
Stanolind, 17 Watkins, 301 bbl., 2,735-2,834 ft.
Texas, 10 Moore, 159 bbl., 3,003-70 ft.

WILDCAT OPERATIONS

Childress County

Texas, 1 P. B. Smith, NW NW Section 97, Block 9, H.&G.N. Survey; 7,500-ft. contract. Drilling 4,610 ft.

Motley County

Humble, 1-C Matador, Section 29, Block J.B., G.B.& C.N.G. Survey. First report.

Sherman County

I.T.I.O., 1 Bryan, C NW Section 369, Block T-1, T.&N.O. Survey. Plugging back to 3,350 ft., to complete as gas well, prepare to complete for 37,000,000 cu. ft. of gas.

Swisher County

Krupp-Flaherty, 1 Kleen, Section 120, Block 10-M; 6,500-ft. test. Surface casing set 625 ft., drilling below 850 ft.

La.-Ark. Fields

(Continued from Page 96)

W. P. Wilson, 1 Hamilton & Mathews, SW NW 32-10s-20w. Fishing 1,622 ft.

Columbia County

Berkshire, 1 H. C. Couch, C N 30 ac., SE SE 22-17-20. Drilling red and green shale 6,366 ft.
G. S. Hammond et al, 1 S. T. Crone, SE SW 9-16-22. Drilling red and green shale 5,616 ft.
McAlester Fuel, 1 K. J. Sayers, NW NE 15-18-22. Set 9⅝-in. casing 4,136 ft., fishing 6,330 ft.
Normandie-Goldston, 1 C. E. Crumpler, C S 30 ac., SE SE 18-17-19. Set 16-in. casing 120 ft., drilling red and green shale 4,240 ft.
Placid Oil, 2-B J. W. Booth, SW SW 20-17-19. Set 9⅝-in. casing 2,195 ft., drilling sandy shale 7,066 ft.

Dallas County

H. H. McBride et al, 1 Southern Kraft Corp., SE SW 16-9-16. Set 12½-in. casing 73 ft., waiting on cement 100 ft.

Lafayette County

Atlantic, 2 Bodcaw Lumber Co., SW SE 29-17-23. Tops: Midway 1,020 ft., Nacatoch 1,750, Annona 2,495 ft., Blossom 2,635 ft., drilling sandy shale 6,910 ft.
J. & J. Oil, 1 J. E. Barnes, 345 ft. W, 615 ft. N, SE cor. 4-16-24. Cored 2,266-83 ft., sandy marl, awaiting orders.

Lonoke County

Lunnon, Howell & Ford, 1 City of Cabot, NE cor. Lot 1, Block 6, 18-4n-9w. Arranging to set casing to test 1,283 ft.
J. F. Russell, 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. 17-5n-10w. S.D., T.D. cor. 2,601 ft

Saline County

Tedford Drilling et al, 1 Cunningham, SW NE 31-3s-15w. 10-in. casing 331 ft., awaiting orders.
Tedford Drilling, 1 Williams, 1,295 ft. SE of No. 1 Cunningham, 31-3s-15w. Set 6-in. casing 294 ft., awaiting orders.

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Clinton Gas Showing in Deep Kanawha County Well

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Aug. 19.—In Kanawha County, West Virginia, the Columbian Carbon Co. deepened No. 4 Campbells Creek Coal Co., a former Oriskany sand gas well in Loudon district, through the Clinton sand which had a showing of gas. With a derrick-floor elevation of 983.9 ft., the Oriskany sand was at 4,820½-48 ft. and the old total depth was 4,872 ft. The Clinton sand was placed at 6,204-72 ft. with 169,000 cu. ft. gas showing at 6,256 ft. No Newburg horizon was reported. It was shot through the Clinton sand with 90 qt. but the hole bridged and, in cleaning out, the sand pump and some line was lost in the hole, which is now being fished. The hole was bottomed in red slate at 6,347 ft.

During the past week in the lower eastern fields 31 completions were reported of which 7 were dry, 18 gas wells, and 6 oil wells with a daily initial of 95 bbl.

SOUTHEAST OHIO

An oil show of 3 bbl. a day from the Newburg in the deep test of the Magnolia Petroleum Corp. on the F. M. Fields farm, Section 19, Berlin Township, Mahoning County, Ohio, was found at 4,453-55 ft. The test is now drilling at 4,715 ft. in the bottom of the Lockport dolomite.

In Geauga County Carter Oil Co. is drilling at 3,320 ft. in the deep test on the George W. Cryle farm, Lot 1, Tract, 1, Chardon Township. In the Lockport dolomite, the Newburg was present with a showing of oil at 3,090-93 ft. followed by water at 3,100 ft. No casing has been set below the Oriskany sand.

Athens County

Rome Township: Gibson O. & G., 8 Willis and Vinnie Vandyke, Section 30, 10 bbl., shot, first Cow Run sand 465 ft.

Holmes County

Monroe Township: Ohio Fuel Gas, 1 P. S. Homer, Section 22, 750,000 cu. ft. gas, Clinton sand, 3,379 ft.

Knox County

Clay Township: C. A. Davis et al, 1 Isaac Miller, Section 15, west side of township, dry, Clinton sand, 2,365 ft.

Licking County

Fallsbury Township: McClay Brothers, 7 U. G. Porter, NW Section 13, 65 bbl. and 500,000 cu. ft. gas, Clinton sand, 3,055 ft.

Medina County

Chatham Township: Marine Trust, 7-A Daniel Ross, Tract 13, Lot 4, 5 bbl., Berea grit, 415 ft.
Marine Trust Co., 8-A Daniel Ross, 5 bbl., Berea grit, 416 ft.

Noble County

Jackson Township: S. L. Skinner et al, 3 F. C. Hughes, N Section 9, dry, 800-Foot sand, 990 ft.

Perry County

Pleasant Township: N. L. Altier & Sons, 1 Leonard A. Gristl, NE Section 33, 10 bbl. after shot, Berea, 1,115 ft.

SOUTHWEST PENNSYLVANIA

On Chestnut Ridge in South Union Township, Fayette County, Pennsylvania, New Penn Development Co., William E. Snee, and others deepened the No. 2 Summit Hotel (Heyn) to 6,897 ft., without increasing the Oriskany gas, although the volume is still in excess of 2,000,000 cu. ft. The formation has changed but it is still sandy. On Laurel Ridge these operators and E. G. Mueller are drilling at 7,846 ft. in the test on the Gregg L. Neel farm in Stewart Township and the Onondaga lime has not yet been reached. Between 7,800 and 7,825 ft. there was a lime section, thought at first to be the Onondaga, but the tools passed back again into shale.

DEEP TESTS

On Chestnut Ridge in South Union Township, Fayette County, Peoples Natural Gas Co. is drilling No. 2 Piedmont Coal Co. at 5,688 ft. and No. 3 at 112 ft.

In Maryland, New Penn Development Co., William E. Snee, and others are sidetracking the hole at 6,300 ft. in the test on the Humberson farm on the Accident dome in Garrett County. The hole deviated 19½°.

Armstrong County

Kittanning Township: H. C. Judson et al, 1 Robert Watterson, third Bradford, 90,000 cu. ft. gas, 3,466 ft.

Greene County

Richhill Township: O. I. Dille et al, 2 Madison Hughes, 50,000 cu. ft. gas, Gordon stray 3,289-3,318 ft., gas 3,293 ft., Fifth sand 3,468-75 ft., gas 3,470 ft., T.D. 3,720 ft.
Wayne Township: Waynesburg Home Gas Co., 1 W. A. Elms, 95,000 cu. ft. gas, Bayard stray 3,265-75 ft., gas 3,268 ft., T.D. 3,383 ft.

Indiana County

Washington County: T. W. Phillips, 1 Lawrence Zimmerman, 338,000 cu. ft. gas, Hundred-foot sand, 1,661 ft.
Young Township: T. W. Phillips Gas & Oil, 1 Nettie Lewis, dry, through Bradford sand, T.D. 3,375 ft.

Washington County

Somerset Township: Equitable Gas, 1 Ira Watkins, through Fifth, dry, T.D. 3,025 ft.
South Franklin Township: Chivers et al, 1 Frank Lyseck, 885,000 cu. ft. gas, Little Dunkard 1,085 ft., gas 1,091 ft., T.D. 1,101 ft.

Westmoreland County

Allegheny Township: Peoples Natural, 1 J. S. and J. P. McLaughlin, 90,000 cu. ft. gas, Tiona and Bradford sands, T.D. 3,712 ft.
Bell Township: Kiski Valley Gas, 1 J. F. Wolford, small gas well, Bradford sand, T.D. 4,050 ft.
Kiski Valley Gas Co., 1 James McBriar, dry, no deep gas, T.D. 3,675 ft.

DRILLING WELLS

Armstrong County

Burrell Township: Equitable Gas, 2 James Deshong, 2,845 ft.
Cowanshannock Township: Peoples Natural Gas, 1 Michael Miketa, building rig.
Mahoning Township: John Wray et al, 1 King Shaffer, 1,422 ft.
Parks Township: T. W. Phillips Gas & Oil, 1 France Klingensmith, 1,518 ft.
Plum Creek Township: Peoples Natural, 1 John Shetler, 3,487 ft.
William McCollins, 2 Add Reefer, 1,523 ft.
Shelocta Oil & Gas, 1 Amos Boyer, moving in rig.
South Bend Township: Equitable Gas, 1 Margaret Claypool, will deepen.
Valley Township: Local company, 2 W. L. Piest, 550 ft.

Clarion County

Clarion Township: R. M. Burnham & Co., 1 Enos Hill, 2,285 ft.
Monroe Township: Owens Illinois, E J. W. Aites, 2,250 ft.
Porter Township: T. W. Phillips, 3 Mary Brown, 2,510 ft.
Red Bank Township: John Lasher et al, 1 Cora M. Truitt, 1,060 ft.

Fayette County

German Township: Greensboro Gas, 1 C. L. Springer, 1,414 ft.
J. H. Carnell, 1 Marion Kurzankuski, fishing 1,900 ft.
Nicholson Township: 1 Ivan Mallory, skidding rig 30 ft. west and rigging.

Greene County

Gilmore and Wayne Townships: H. D. Freeland et al, 1 R. R. Headley, 1,710 ft.
Monongahela Township: John Ingram, 1 Bliss Donham, 1,085 ft.
Wahler-Powers O. & G., 1 Silas Provins, 965 ft.
Morris Township: Romney Rutan et al, 1 Alfred Rutan, 880 ft.
Richhill Township: Carnegie Natural, 8 J. K. Loughbridge, 2,148 ft.
Wayne Township: I. S. White et al, 1 Norman Strosnider, 2,905 ft.
Whiteley Township: Carnegie Natural, 4 B. F. Murdock, will deepen.

Washington County

Amwell Township: Carnegie Natural, 2 W. C. McCollum, 410 ft.
Carnegie Natural, 2 W. C. Horn, location.
Carnegie Natural, 1 Frazee, 1,978 ft.
Orrill et al, 1 Membs Lantz, 1,515 ft.
H. V. Sprowls et al, 1 Clarence VanKirk, Gordon stray 2,523 ft., show oil 2,548 ft.; shut down to test.

Indiana County

Armstrong Township: J. C. Rinn, 2 Perdon heirs, 3,690 ft.
South Mahoning Township: John Wray et al, 1 James Lukehart, 1,190 ft.
Washington Township: Peoples Natural, 1 Calvin Cribbs, 938 ft.
T. W. Phillips Gas & Oil, 1 John Lizzenski, 1,374 ft.
West Mahoning Township: 1 Jesse Williamson, 938 ft.

Westmoreland County

Allegheny Township: Hyde Park Foundry, 2 Andrew Grinder, rigging up.
Peoples Natural, 2 J. F. Young, 3,817 ft.
Belle Township: Peoples Natural, John McCreary, rigging up.

WEST VIRGINIA

In Harrison County, West Virginia, the important test of the Hope Natural Gas Co. being drilled with a rotary has reached 4,227 ft. The Benson sand was topped at 4,060 ft. The test is located on the G. S. Gribble farm in Grant district and the lower Devonian will be reached about 7,000 ft.

COMPLETIONS

Boone County

Scott district: Owens, Libby-Owens, 27 Allen and Pryor, 153,000 cu. ft. gas, Berea, cleaning out after shot.

Cabell County

Guyandotte district: Lusher et al, 1 Gatewood Brothers, 5 bbl., Big lime, 1,196 ft.; will acidize.

Gilmer County

DeKalb district: Cabin Run, 2 Clara L. Riddle, 149,000 cu. ft. gas, before shot, Big Injun 2,015-60, gas 2,032-37 ft., T.D. 2,077 ft.
McCall Drilling Co., 5 Robert Napier, 150,000 cu. ft. gas before shot, Big Injun 1,725-1,812 ft., gas 1,739-47 ft., gas 1,798-1,803 ft., T.D. 1,813 ft.

Clay County

Union district: Reed, Wheeler, Young Oil & Gas Co., 23 Goshorn heirs, 29,800 cu. ft. gas, Injun sand, T.D. 2,250 ft.

Lincoln County

Sheridan district: United Fuel Gas, 2093 Guyan Land Association, dry, drilled deeper from 1,898 ft., Brown shale 2,648-3,987 ft., show gas 2,795 ft., shot 2,200 lb. gelatin 2,646-2,992 ft., test 17,000 cu. ft. gas; abandoned, T.D. 2,992 ft.

Pleasants County

Jefferson district: E. S. Gilmore, 1 E. H. Scadden et al, dry, Squaw, 1,869 ft.

Upshur County

Banks district: Cumberland & Allegheny Gas, 297 P. A. Darnell, 950,000 cu. ft. gas, Squaw 1,540-70 ft., gas 1,540-50 ft., T.D. 1,639 ft.

Wetzel County

Proctor district: S. J. Brendel et al, 2 M. P. Wells, 185,000 cu. ft. gas, Pittsburgh Coal 1,164-70 ft.; completed in Gordon sand; T.D. 3,198 ft.

Wirt County

Clay district: M. H. Burke, 3 John L. Showalter, 68,000 cu. ft. gas, Injun sand 1,049-51 ft.; T.D. 1,121 ft.

ORISKANY GAS FIELD

Kanawha County

Poca district: United Carbon, 830 O. B. Boggess, 2,145,000 cu. ft. gas, Oriskany 5,003 ft., gas 5,006 ft., drilling at 5,013 ft.
West Virginia Gas, 041 Samuel H. Fields, 4,226,000 cu. ft. gas, Oriskany 4,048 ft., drilling at 5,069 ft.
Columbian Carbon, 1 D. W. Taylor et al, 2,377,000 cu. ft. gas, Oriskany sand, drilling at 5,099 ft.

DRILLING

Poca district: Godfrey L. Cabot, 10 Putnam Co., Corniferous lime 4,862-4,962 ft.
Godfrey L. Cabot, 2 Poca Coal & Land Co., 95,000 cu. ft. gas, Big lime 1,865 ft.
Poca Fork, 1 Anna M. Jones, Corniferous topped 5,087 ft.

NEW WORK

Braxton County

Birch district: Cameron Prod. Co., 1 and 2 Vada A. Hamvic, elevations 1,005 and 986 ft.

Clay County

Buffalo district: Pittsburgh & West Virginia Gas, 7739 P. A. McLaughlin, elevation 1,158.6 ft., and 7763 P. M. Summers et al, elevation 817.5 ft.

Gilmer County

Troy district: F. G. Gish, 7 F. W. Reed, elevation 760 ft.

Jackson County

Ravenswood district: Columbian Carbon, 1 P. F. Riggs et al, elevation 634.4 ft.

Kanawha County

Poca district: Godfrey L. Cabot, 1 Mary A. Mason.

Logan County

Logan district: O. B. Cunningham, 1 John Justice, elevation 967.7 ft.

Pleasants County

Jefferson district: A. F. Marple, fee 17, elevation 1,040 ft.

Putnam County

Curry district: Dennis M. Roy, 1 Layman Melton and Bertha Wood, elevation 850 ft.

Ritchie County

Clay district: McBurney et al, 1 G. H. Darnell, elevation 970 ft.
Murphy district: Pittsburgh O. & G., 3 J. P. Coyle, elevation 646.6 ft.
B. B. Cox 1 W. J. and F. W. Burwell, elevation 793 ft.
Grant district: A. E. Dye Heirs O. & G., 3 A. E. Dye, elevation 752.5 ft.

Roane County

Harper district: B. F. Wright et al, 1 C. L. Kiser, elevation 767 ft.

Proceedings of N.G.A.A. Now Being Distributed

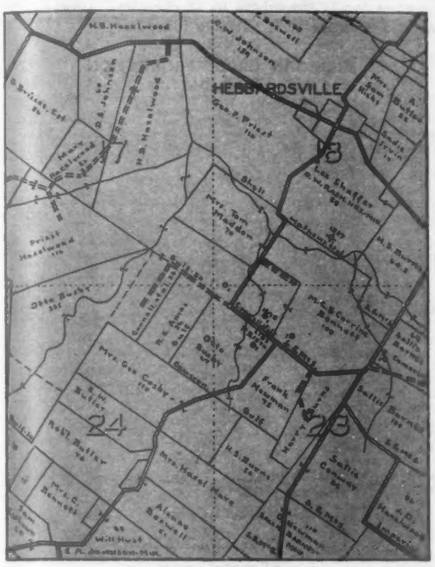
Copies of the procedings of the nineteenth annual convention of the Natural Gasoline Association of America are being mailed to all those who registered at the convention last May and additional copies may be secured from F. W. Lowe, secretary, at a cost of $1.50 each. Offices of the association are at 923 Kennedy Building, in Tulsa.

Good Well in Hebbardsville Gives Kentucky New Pool

By STAFF CORRESPONDENT

OWENSBORO, Ky., Aug. 17.—Completions in western Kentucky last week consisted of five oil wells and seven dry holes. The most important completion was O'Connell, 1 Bennett, which definitely establishes the Hebbardsville pool as a commercial producer, after nearly 2 years.

The discovery well, No. 1 Otto Busby, was drilled by Johnnie Shoemaker et al in December 1938, to a total depth of 2,183½ ft., through the McClosky, which was dry. Burt Cameron et al took over the well,


HEBBARDSVILLE
Gas P. Priest
Lee Shaffer
Otto Busby
Frank Mountjoy
Gulf
Mrs. Hazel Hunt
Mrs. C. Bennett
Alpha Bennett
W. H. Hunt
Mrs. Geo. Cosby
Mrs. Geo. Wendelken
Mrs. Ella Bennett
Mrs. Ella Bennett
Mrs. Ella Bennett

MICHIGAN OPERATIONS

Yenior and McKenna Wells Have Started Active Play

By OTTO C. PRESSPRICH

SAGINAW, Mich., Aug. 19.—Staking an east offset to its No. 1 McKenna wildcat discovery in Section 15 of Hamilton Township, Clare County, Sun Oil Co. this week is going ahead with plans to develop what oil interests term the most important Michigan basin find since Temple, in the summer of 1938. Sun has a monopoly on the acreage in the district and its discovery well, which flowed at 65 bbl. an hour after being drilled into the dolomite, continued to produce heavily.

Meanwhile, the Rayburn & Major Yenior discovery in Adams Township of Arenac County, which was brought in last month and has been acid treated, continues to produce at around 75 bbl. an hour, giving the Central Michigan area two points of interest and taking attention from the southwestern counties, where production in Kent, Ottawa, Allegan and Van Buren counties has continued a steady decline.

A dozen tests are under way in the Adams district, development coming in Sections 14, 15, 22 and 23 with Pure Oil Co., Charles W. Teater, Rayburn & Major, Smith Petroleum Co., American Drilling Co. and United Drillers & Producers, Inc., as the principal operators. However, none of the tests has made extensive progress. Geologists are not definite as to the possibilities, but believe the sector "spotty."

Though Sun Oil controls most of the acreage in the vicinity of its McKenna strike, other operators have small blocks of acreage in Hamilton Township and are going ahead with plans for additional tests. Gulf Refining Co. has a quarter section under lease in Section 10, a mile north of the discovery; Thompson Brothers are reported holding 120 acres in Section 10, Smith Petroleum has a small block in Section 22, and Freeman Oil Co. a spot in Section 23, a mile east of the McKenna.

Pipe Line Under Construction

The strike is Sun's first major discovery in its 15 years of activity in Michigan. Production from its well was being trucked by Simrall Corp. and this week a pipe line is being run from Beaverton, through the Grout Township area, into Hamilton. Sun has opened a small development in Grout Township, where its No. 1 Cameron is yielding 15 bbl. a day from the Dundee. Confirmation of the pool is due soon, the No. 2 Cameron offset having topped Dundee at 3,776 ft.

Gulf Refining Co. has rigged rotary tools on No. 1 Bateson in Section 2 of Monitor Township, Bay County, for the projected deepest test ever drilled in Michigan. The well has been a small producer from the Monroe limestone at around 3,820 ft. for a year. Intentions are to test to a depth of from 7,000 to 9,000 ft.

While the basin developments continued, the Michigan oil picture otherwise was without incident of note and last week brought the smallest increase in potential daily production for any week this year, the Sun discovery not yet being listed among the completions.

The completions report listed five producers of from 60 to 150 bbl. a day, for a total of 504 bbl., while 10 tests were recorded as dry, 1 location was temporarily abandoned and 1 test was completed as a small natural-gas well. Two of Allegan's five completions were producers, H. C. Nelson, 2 Peters in Overisel being good for 150 bbl. a day naturally while Charles W. Cook completed No. 1 Hayes as a wildcat development in Section 17 of Trowbridge. After acid treatment, the well rated 144 bbl. a day. It may promote some play in that area. Other producers were the Ross, 3 Berry gas well, good for 660,000 cu. ft. a day, in Arenac's Clayton Township field, a 60-bbl. Walker Township well drilled by W. H. Clock, Schrot's 60-bbl. producer in Greendale of Midland, Edward B. Strom's 90-bbl. well in Tallmadge of Ottawa.

Wildcat Activity

New tests, for which the state Conservation Department granted permits last week, numbered 24, the most in any week in several months. Thirteen of the 24 are for wildcat tests, the development being planned for 17 townships in 12 counties. Allegan and Arenac counties each got five locations.

MICHIGAN CRUDE PRODUCTION
July 1940

	Wells	Daily runs
Porter-Yost	341	4,854
Greendale-Chippewa	179	1,157
Geneva-Midland	2	16
Edenville-Midland	26	276
Sherman-Isabella	61	1,406
Vernon-Leaton-Denver	79	749
Wise-Isabella	46	2,970
Freeman-Redding-Clare	147	13,338
Grant-Clare	3	5
Beaverton-Gladwin	20	128
Bentley-Gladwin	36	339
Buckeye-Gladwin	306	2,543
Grout-Gladwin	1	9
Secord-Gladwin	2	2
Ogemaw	239	1,229
Adams-Arenac	16	585
Clayton-Arenac	51	1,324
Tuscola	6	
Saginaw-Bay area	56	118
Birch Run	25	23
Dundee-Monroe	10	233
Montcalm	34	300
Allegan (all pools)	469	7,192
Holland-Zeeland	3	20
Muskegon	59	51
Van Buren (all pools)	285	3,681
Walker-Wyoming-Tallmadge	422	10,407
Total	2,924	51,955

MICHIGAN COMPLETIONS

Allegan County

Allegan Township: E. O. Lucas, 1 C. Wood, SE SW NE 4-2n-13w. Dry, T.D. 1,553 ft.

Overisel Township: Weller, Dapar & Bakke, 1 Harry Lankheet, NW SE NE 1-4n-14w. Dry, T.D. 1,633 ft. H. C. Nelson, 2 J. Peters, SE NW SW 9-4n-14w. 150 bbl., naturally, T.D. 1,487 ft.

Trowbridge Township: Charles W. Cook, 1 Charles E. Hayes, SE NE SW 17-1n-13w. 144 bbl., acid., T.D. 1,316 ft.

Watson Township: Wolverine Natural Gas Corp., 1 L. McLaughlin, NE SW NE 9-2n-12w. Dry, T.D. 1,830 ft.

Arenac County

Clayton Township: W. E. Ross, 3 Archie Berry, C NW SE 9-20n-4e. 660,000 cu. ft., T.D. 1,200 ft.

Cass County

Silver Creek Township: Clapsaddle & Harris, 1 Prillwitz, NW NW SW 17-5s-16w. Dry, T.D. 1,065 ft.

Volinia Township: Schurtz & Prather, 1 Pullin, SW SW NW 14-5s-14w. Dry, T.D. 1,150 ft.

Genesee County

Gaines Township: Lewis Burr, 1 A. C. Hermann, SW SW NW 13-6n-5e. Dry, T.D. 2,493 ft.

Kent County

Plainfield Township: E. R. Roach, 1 Glen Hunsburger, SE SE SW 28-8n-11w. Dry, T.D. 2,207 ft.

Walker Township: W. H. Clock, 1 Marcellus-Terwein, Comm., NW NW NW 30-7n-12w. 60 bbl., acid, T.D. 1,917 ft.

Midland County

Greendale Township: Leo S. Schrot, 1 Emmett Scott, NE SE NW 8-14n-2w. 60 bbl., acid, T.D. 3,579 ft.

Monroe County

Dundee Township: Edgar A. Bovell, 1 Rean, SE SW NE 19-6s-6e. Temporarily abandoned at 300 ft.

Ottawa County

Holland Township: Welsh Oil, 1 Pas, SW NW SW 34-5n-15w. Dry, T.D. 1,585 ft.

Tallmadge Township: Edward B. Strom, Tr., 4 Nichol, NE NW NW 23-7n-13w. 90 bbl., acid, T.D. 1,858 ft.

Roscommon County

Richfield Township: Gulf Refining, Production Division, 1 State, C E½ SE NW 36-23n-1w. Dry, T.D. 1,980 ft.

Van Buren County

Bloomingdale Township: C. C. Goff, 1 Vincent & Galicki, C S½ SW SW 12-1s-14w. Dry, T.D 1,325 ft.

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By

T. R. INGRAM

Big Well in Tensleep Sand Extends Wertz Field East

DENVER, Colo., Aug. 19.—Best completion in Rocky Mountain area was the Sinclair-Wyoming, 14 Unit, Wertz field, Carbon County, Wyoming, which flowed at the rate of 201 bbl. an hour from the Tensleep and marked a ¼-mile extension on the east side. Ohio, 1 Coughlin, at Rex Lake, was recompleted in the Dakota for 43 bbl. a day after plugging back. Boybell, 2 Kyne, Kirby Creek district, was dry and abandoned, and a small well in the same district was completed by A. L. and Fred Freudenthal.

The Montana-Dakota Utilities Co. completed a number of small gas wells at shallow depths, two in the Cedar Creek field in Fallon County; two in the Bowdoin field in Phillips County, and one in the Devon field in Toole County. Last named, best of the group, made 3,850,000 cu. ft. Kevin-Sunburst had one completion and Lance Creek none. Cut Bank had three completions, best being A. R. Pardue, 4 Tribal-171 for 220 bbl. in 16 hours.

New operations include three in Lance Creek, a wildcat in northwestern Sweetwater County by the Farson Oil & Gas Co., one in Uinta County, one in Washakie County, one in Blaine County, in Montana, four in Cut Bank, one in Liberty County, three in Phillips County, two in the Devon field in Toole County and one in Kevin-Sunburst.

COLORADO

El Paso County

F. F. Hintze, 1 State ..... CEL SE SE 16-11s-60w
S.D. 1,620 ft.

Garfield County

Joe T. Juhan, 1 Clough ..... C NW SE 22-6s-94w
M.I.C.T. (cor. farm name).

Logan County

West Plains, 1 Sheldon ..... SE NW SW 3-10n-55w
T.D. 1,850 ft. in limy sh.; U.R. 10-in.

Moffat County

Steamboat Springs Syndicate, 1 Sutton, Dry Lake test, was incorrectly reported abandoned last week at 2,252 ft. in the Morrison. Depth was corrected back to 2,215 ft. by S. L. M., and it is drilling ahead.

Steamboat Springs Synd., 1 Sutton NE NE SW 1-5n-96w
Drlg. 2,246 ft.
Texas, 2 Wick ..... Lot 9, 10-4n-91w
Drlg. 4,098 ft.
Mountain Fuel Supply, 2-A Kuykendall .....
SW NW NW 23-12n-100w
T.D. 2,600 ft., cmtd. 6¼-in. at 2,596 ft., perf. and testing in three sands by stages.

Rio Blanco County

Buford Oil, 1 Government ..... SW SW 16-1n-91w
T.D. 4,160 ft., reamed to 4,005 ft., running 6¼-in. and will underream to bottom.
Texas-California, 4 Unit ..... NW NW NW 2-2n-94w
Drilling 3,133 ft.
Raven Oil & Ref., 30 ..... SE NW NE 31-2n-102w
Drilling 525 ft. (Rangely field).

Routt County

Craig-Moore, 1-X Irwin ..... SW NE 33-7n-85w
Drilling in red beds 2,410 ft.

WYOMING

Albany County

Ohio Oil, 1 Coughlin, SW NE NW 26-16n-77w, Rex Lake field, an old well in the Lakota at 3,936 ft., drilled deeper to test the Sundance, was recompleted at 3,860 ft. after plugging back from 4,436 ft. for 43 bbl. of oil and 33 bbl. of water from the Dakota at 3,851-60 ft. It had water in the Sundance.

Big Horn County

Prescott & Mileski, 1 Government 1-51n-93w
Res. at 1,190 ft., drilled to 1,325 ft. and S.D. for repairs.
Ohio, 3 Davis ..... NW SW NW 34-56n-97w
T.D. 4,224 ft. in Madison lime; swabbing and testing.
Frank S. Scott, 1 Robertson ... SE SE SE 6-54n-93w
Drilling 865 ft. in Tensleep, top at 863 ft., 6⅝-in. at 787 ft.

Carbon County

An extension of the Tensleep horizon on the east side of the Wertz field in a large well was made in the Sinclair-Wyoming, 14 Unit, NW SW NE 7-26n-89w. It was drilled to 6,043 ft. The 7-in. was cemented in the top of the Tensleep at 5,997 ft. It flowed at the rate of 201 bbl. per hour through the 2-in. tubing set at 5,997 ft. Location is one-fourth of a mile northeast of No. 10-A Wertz, the discovery in the Tensleep, which averaged 75 bbl. per hour in December 1937, at 5,886 ft., total depth. Last year it was deepened to 6,161 ft. and recompleted for 300 bbl. per hour.

Producers Oil, 1 Lake Valley ..... CNL 14-20n-88w
T.D. 3,752 ft.; changing over from cable tools to rotary.

Crook County

Vickers-Continental, 1 Duncan-Lobban .....
NE NW SW 28-57n-64w
Drilling 682 ft. (Government Canon test).

Fremont County

Logue Trust, 1 Wisner ..... NE SW 8-33n-98w
Dry at 950 ft. in Cody sh.
Pilot Oil, 6 Enos ..... SE SE NE 21-3n-1w
Drilling 1,030 ft.
Sinclair-Wyoming, 2-A Muskrat ..NW SE SW 34-34n-92w
T.D. 5,549 ft., cemented 7-in. on top Lakota at 5,539 ft.

Hot Springs County

Boybell Oil, 2 Kyne, NW SE SW 22-43n-92w, Kirby Creek, was plugged and abandoned at 804 ft., total depth. It had water in the Frontier and Dakota.

A. L. and Fred Freudenthal, 3 OPC-7, NW Tract 51-B, approximately NE SE 21-43n-92w, Kirby Creek, was completed in the Frontier at 400 ft. for 15 bbl. of 41.5-gravity oil and 90 bbl. of water per day.

Lincoln County

H. C. Harris, 1 Government SE NW NW 23-21n-117w
Drilling 3,177 ft. in limestone.
Fontenelle Dev., 1 Pomroy ..... NE SW 5-24n-113w
Drilling 1,285 ft.
Robert Miller Taylor, 1 State .... NE cor. 36-25½n-115w
Drilling 1,989 ft. (Wyoming structure test).

Natrona County

Iron Creek Oil, 1 Government, CWL SW NW 11-32n-82w, Iron Creek district, was unable to clear hole of lost tools and plugged and abandoned at 721 ft. Rig was skidded east for No. 7.

Stanolind, 8 Unit ..... NW NE 26-40n-79w
T.D. 2,957 ft., testing third Sundance, made 60 bbl. per day through 3/32-in. choke on 2-in. tubing, 5½-in. at 2,949 ft.
Iron Creek Oil, 7 ..... C SW NW 11-32n-82w
Drilling 720 ft. (first report).
Royalty Oil, 1 Midert ..... SW SW SW 26-35n-80w
Drilling 1,520 ft. in Steele shale.
Lewis Gebhart, 1 Government NW NE SE 10-39n-78w
S.D. 1,587 ft.; Shannon sand at 1,273-1,392 ft.
General Petroleum, 55-21-G ..... NW SE 21-35n-77w
T.D. 8,015 ft., perf. 11¼-in. at 4,505-39 ft., rigging up for pump test of Shannon sand.

Niobrara County

Lance Creek had three new operations, no completions. Several recent completions and drilling wells showed water in the base of the Leo in what is now designated as the third and fourth benches of that horizon. The area in which water is showing appears to be quite extensive throughout the field.

A. B. Cobb, 7 Novick ..... NW SE SW 6-35n-65w
Drilling 1,660 ft., cemented 13⅜-in. at 318 ft. (first report).
Continental, 7-Apex-3 ..... SE SE NW 34-36n-65w
First report.
Continental, 20 Tom Bell ..... NW SE SE 33-36n-65w
First report.
Argo Oil, 14-A Elliott 5-35n-65w
Drilling 4,319 ft., top first Sundance 3,575 ft.
Minnelusa-MacKinnie, 6 Thompson .....
NE NW SE 7-35n-65w
S.D. 5,453 ft.
Continental, 8 Joss ..... SW NW NE 6-35-65
Drilling shale 3,660 ft.
Ohio, 16 Putnam ..... SW SW NW 4-35n-65w
T.D. 5,529 ft., P.B. to 5,391 ft., testing.
Ohio, 7 Rohlff ..... NW NE SE 32-36n-65w
T.D. 5,449 ft., trying to shut off water in third bench of Leo.

Park County

V. M. Kirk, 3 Government NW NW SW 24-58n-98w
Drilling 2,925 ft. in red beds.
Yale Pet., 1-B Frisby ..... SW NE NE 31-52n-100w
T.D. 3,628 ft. in Embar, testing.
Resolute, 2 State ..... SW SW 16-57n-101w
T.D. 9,768 ft., testing Dakota at 9,730-58 ft. cores showed some gas in top and oil in base.

Sublette County

Texas, 1-F ..... SW SW SW 27-27n-113w
Drilling 108 ft.
Texas, 1-H ..... CWL NW SW 2-27n-113w
T.D. 1,140 ft., testing after a shot.
North La Barge Oil, 1 Govt. .. CNL NE SW 21-27n-113w
Drilling 590 ft., slim-hole rotary.

Sweetwater County

The Farson Oil & Gas Co., composed of Rock Springs business men, and with whom Ray Phebus is associated, have started a wildcat in the Farson district in northwestern Sweetwater County in an area known as the "bad lands" hills. It has been known for a long time that some kind of a structure existed in that district. The company took out one of the first government leases issued following the revision of the oil-leasing act and made the location early in 1938 on the Phebus geology.

Farson Oil & Gas, 1 Government C SE NE 18-25n-108w
Drilling 480 ft., cemented 12½-in. at 145 ft. (first report).
Union Gas, 1 Hummer ..... NW NW NE 6-17n-103w
Drilling 1,983 ft. in Frontier.
Mountain Fuel Supply, 1 Murphy SE SE SE 27-17n-104w
S.D. at 4,156 ft.
Gus Pongratz et al, 1 Clark .. NW NE 22-19n-104w
Drilling 3,530 ft. in top of Sundance, top Dakota 3,170 ft.
Red Desert Corp., 1 Aspden . NW SW NW 34-18n-103w
Drilling 3,165 ft., Dakota, top at 3,100 ft., dry.
Vermilion Oil, 2 Government ... SW SW SW 7-12n-99w
S.D. 3,002 ft.

Uinta County

McCurdy-Morgan, 1 ..... SE SW SW 32-19n-116w
Spudding 60 ft. (first report, Cumberland district).
Elynor Oil, 1 ..... NE SE SE 6-18n-116w
Drilling 555 ft.

Washakie County

J. E. Longnecker, 1 ..... CSL SW NE 24-47n-90w
Drilling 46 ft., 8¼-in. cemented 16 ft., show oil 44-46 ft. (first report, Sherard structure).

Weston County

Joseph Dornacker, 1 Kinney-Collins NW NE 33-45n-61w
Drilling 120 ft.
Lanam Crowley, 1 ..... SW SW NW 8-46n-63w
Rig on ground.
Charles Stough, 12 ..... CWL SW NW 4-46n-63w
Drilling 157 ft.
Pierre La Fleishe, 1 Dober NE NE NE 21-45n-63w
Drilling below 700 ft., rotary.
John Brorphy, 1 Hansen NW NE NW 13-44n-63w
Drilling 1,232 ft., test to Muddy sand.
Wheedon Oil, 6 State ..... CSL NW NE 16-46n-63w
Drilling at 150 ft.

MONTANA

Big Horn County

Massey Oil & Gas, 1 Government . SE SW SE 11-2s-31e
Drilling 218 ft. in Carlile shale, 10¾-in. cemented at 102 ft.

Blaine County

Cherry Ridge Synd., 1 Harbolt NW NW SW 1-35n-20e
Drilling 20 ft. in Bearpaw shale (first report).

Carbon County

Continental, 1 Prigge ..... SE SE SE 33-9s-25e
Drilling 2,278 ft. in shale.
R. C. Tarrant, 2 McKay ..... SE NW 4-6s-18e
S.D. at 3,057 ft.

Fallon County

Montana-Dakota Utilities, 143, SE NW NE 4-6n-60e, Cedar Creek gas field, was completed at 1,007 ft., total depth, for 200,000 cu. ft. of gas in the Judith River at 901-90 ft.

Same company's No. 142, NE SW SW 33-7n-60e, was completed at 941 ft. for 310,000 cu. ft. per day in the Judith River at 837-930 ft.

Fergus County

E. & M. Oil & Gas, 4 .. SW SE SW 34-22n-18e
S.D. 528 ft., water in Eagle sandstone, 5 3/10-in. at 495 ft.

Glacier County

Cut Bank had three completions and four new operations. Best well was A. R. Pardue, 4 Tribal-171, SE SE SE 7-32n-5w, in South Cut Bank, which swabbed 220 bbl. first 16 hours and then shut down as storage was full. Total depth 2,939 ft. Oil rose 2,250 ft. from the Cut Bank sand at 2,900-34 ft. Main pay was at 2,920-34 ft.

Texas Co., 6 State, NW SW 16-32n-5w, also in South Cut Bank, swabbed 111 bbl. first 24 hours at 2,946 ft., total depth, from the Cut Bank at 2,910-45 ft. The main pay was at 2,934-45 ft.

Glacier Production Co., 1 Dahlquist Unit, 12-34n-5w, gaged 11,000,000 cu. ft. of gas first 24 hours at 2,552 ft., total depth, from the Cut Bank sand at 2,512-52 ft. First gas was at 2,523 ft.

Montana-Dakota, 1 Tribal-112 .. SW NW NE 16-35n-6w
First report.
M. R. Wagner, 1 Tribal-184 .... NE NE NE 13-32n-6w
First report.

Glacier Prod., 1 Delaney Unit ..... C 36-34n-5w
First report.
Texas, 4 Schlag ..... NE SW SE 26-35n-6w
First report.
Montana Headlight, 7 Britton .... NW NW SE 11-34n-6w
Cemented 10¾-in. at 523 ft.
Santa Rita, 4 Government ..... CSL NE SE 4-32n-5w
Cemented 10¾-in. at 687 ft., top Colorado 680 ft.
Hannah-Porter, 5 Allot.-130 .. CWL NW SE 6-32n-5w
Cemented 10¾-in. at 598 ft.
R. C. Tarrant, 2 fee ..... NW NW SE 19-34n-5w
Drilling 1,450 ft., cemented 8⅝-in. at 457 ft., top Colorado 457 ft.
Texas, 6 Curran ..... C SW NE 8-32n-5w
Cemented 10¾-in. at 665 ft., top Colorado 640 ft.
A. B. Cobb, 1 Teterud ..... NE NE NE 24-37n-5w
1,225 ft. of oil in hole from sand, probably upper Cut Bank at 2,695-2,704 ft.

Liberty County

Western Natural Gas Co., 1 Brown, SE NE NE 24-37n-3e, a wildcat on west side of the Whitlash gas field, was abandoned at 1,960 ft. in the Kootenai. It had 150,000 cu. ft. of gas at 1,575-1,635 ft., 4 bailers of water per hour at 1,833-1,910 ft. and 10 bailers per hour at 1,930-60 ft. Location is 2 miles west of a dry hole which went to the Sunburst and 2½ miles west of nearest gas well.

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Western Natural Gas, 1 Wilson .. NW NW NW 27-37n-4e
First report.

Phillips County

Montana-Dakota Utilities Co. completed two shallow gas wells in the Bowdoin field. Its No. 601 Bethel, SW SW 26-33n-32e, was completed at 1,046 ft., total depth, for 600,000 cu. ft. per day, 284 lb. rock pressure, and No. 602 Martin was completed at 1,141 ft., total depth, for 240,000 cu. ft., pressure 432 lb.
Montana-Dakota, 603 Norman ..... C NE NW 32-33n-33e
S.D. 100 ft. after cementing 8⅝-in. on bottom (first report).
Montana-Dakota, 604 Smith ..... C SE SE 23-33n-32e
Spudding at 40 ft. (first report).
Montana-Dakota, 605 Martin ..... C SE SE 22-33n-32e
S.D. 103 ft. (first report).

Pondera County

R. C. Tarrant, 1 Lang ..... SE SE NW 14-31n-5w
Drilling 1,780 ft.

Stillwater County

Texas, 1 Unit ..... SE NW 10-4s-19e
T.D. 825 ft., reaming at 500 ft. to set 13⅜-in.

Toole County

There was one completion and two new operations in the Devon field, the first drilling in that area for some time.

Montana-Dakota Utilities, 1 Churchill, SW NE 19-33n-2e, inside location, was completed at 780 ft. for 3,850,000 cu. ft. from the Colorado shale.

In Kevin-Sunburst there was one completion and one new operation. Prevol & Shea, 6 Government, NE NW SW 11-35n-3w, pumped 10 bbl. per day at 1,806 ft., total depth, from the contact at 1,804 ft., after acidizing with 500 gal.
Montana-Dakota, 1 Lake City ..... C NE SE 17-33n-2e
Drilling 250 ft. in Colorado shale (first report).
Frank P. Walsh, 1 Mowat ..... SW NW SE 7-33n-2e
Drilling 50 ft. in Colorado shale (first report).
Big West, 20 Dahlquist ..... CWL NW NE 28-35n-3w
Drilling 510 ft. (first report).
B. A. S. Aronow, 4 Ellingson .. CEL SW SW 14-35n-3w
Drilling 1,055 ft. (corrected location).
Kippen O. & G., 2 Solberg ..... CSL NW NE 20-35n-3w
Cemented 8¼-in. at 1,070 ft.
Twin Fields Oil, 2 Government ... SE SE SW 21-35n-3w
T.D. 1,660 ft., cemented 7-in.
Enfield, 3 Zachor ..... C NW NW 20-35n-1w
T.D. 1,599 ft., contact 1,591-99 ft., show oil, acidized 1,000 gal., testing.
A. E. Crumley & Son, 20 Fryberger ..... SW SW NE 24-35n-3w
Drilling 890 ft.
Coolidge & Coolidge, 8-A State ... NW SE NW 36-36n-2w
T.D. 1,598 ft., running 7-in.
Morton O. & R., 9 Morton ..... NW NW SE 13-34n-2w
Drilling 1,200 ft.
Twin Falls Oil, 1-A Govt. ..... NW NW NW 28-35n-3w
S.D. 1,732 ft.

NORTHWEST NEW MEXICO

McKinley County

Teague, Greer, 1 Santa Fe 33-18n-10w
S.D. 920 ft.
Petroleum Producers, 9 Hospah .. NW NW SE 1-17n-9w
T.D. 1,570 ft., testing.
Petroleum Producers, 10 Hospah . CEL SE SW 36-18n-9w
Drilling 1,630 ft.

San Juan County

Continental, 109 Rattlesnake .. NW NW NE 12-29n-19w
Drilling 125 ft., cemented 8⅝-in. at 25 ft. (corrected location).
Claude Carroll, 1 Cornell ..... SW NE 11-29n-12w
Drilling 1,340 ft.
Kutz, 1 Government ..... NW NW 28-28n-10w
Drilling 1,650 ft.

San Miguel County

Southwest Drilling, 1 Conchas ..... NW NE 34-17n-21e
Drilling 2,500 ft.

UTAH

Box Elder County

Utah Dutchess, 1 ..... NW cor. 26-14n-8w
Drilling 400 ft.

Daggett County

Mountain Fuel Supply, 5 Murphy .. SW NE SW 15-3n-24e
Drilling 4,118 ft.

Ohio Fields

(Continued from Page 101)

Guernsey County

Wills Township: Walker & Anderson, 1 J. T. Cunningham, Sec. 16. Dry, T.D. 441 ft.

Holmes County

Monroe Township: Ohio Fuel, 1 Ralph Homer, Lot 6, second quarter, 740,000 cu. ft. gas, Clinton 3,370-76 ft.

Knox County

Clay Township: Davis et al, 1 Isaac Miller, Sec. 15. Dry, T.D. 2,363 ft.
Monroe Township: Johnson et al, 1 A. V. Butterfield, Lot 6, second quarter, 2,340,000 cu. ft. gas, Clinton 2,595-2,607 ft.

Newark Field—Licking County

Madison Township: Ohio Fuel, 1 William F. Oatman, Lot 8, second quarter, 1,000,000 cu. ft. gas, Newburg 2,204-07 ft. and 2,211-16 ft.
Newton Township: Shrider et al, 4 Kate McKinney, Lot 8, fourth quarter, 1 bbl., shot, Berea 511-22 ft.

Meigs County

Sutton Township: Roush Brothers, 1 W. D. Roush, Sec. 30, 250,000 cu. ft. gas, shot, 2,100 lb. detonite at 2,866-3,131 ft. (Ohio shale), T.D. 3,191 ft.

Monroe County

Summit Township: Lucas & Thornberry, 1 Henry Young, Sec. 23, 25 bbl., shot, lime, pay at 1,221-25 ft.

Morgan County

Marion Township: Crowley, 1 Earl Bowman, Lot 7. Dry, Keener, T.D. 1,215 ft.

Noble County

Beaver Township: Yoker Valley, 1 F. R. Perkins, Sec. 28, 250,000 cu. ft. gas, Berea 1,605-11 ft., T.D. 1,614 ft.

Perry County

Thorn Township: Ohio Fuel, 1 Dora Hanby, Sec. 28. 2,270,000 cu. ft. gas, Clinton 2,668-92 ft.

Stark County

Lake Township: White Estate, 1 Ford Kamp, Sec. 27. Dry. Clinton, T.D. 4,630 ft.

Tuscarawas County

Dover Township: East Ohio, 1 North American Refractories Co., Lot 8, second quarter, 4,000,000 cu. ft. gas, Clinton 4,636-4,744 ft., T.D. 4,780 ft.

Washington County

Barlow Township: McTaggart et al, 1 D. F. Turner, Sec. 8. Dry. Injun, T.D. 1,591 ft.
Grandview Township: Campbell, 1 P. A. Cundry, Sec. 33, 2 bbl., shot, Squaw 1,770-98 ft.
Palmer Township: Columbian Carbon, 1 J. C. Stottar, Sec. 32, top Corniferous lime 3,835 ft., Oriskany 3,943-70 ft., water at 3,950 ft., no oil or gas, T.D. 3,991 ft., P.B. to 1,757 ft. to test Berea 1,543-57 ft., gas exhausted, plugged.

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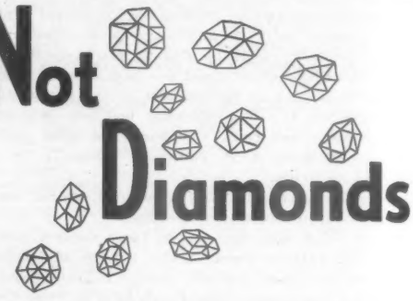

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Wildcatting on Increase in Spite of Recent Failures

By GEORGE WEBER

JACKSON, Miss., Aug. 19.—The past week showed continued failure to find new production in the Lower Cretaceous of Central Mississippi. Interest is directed to deeper formations in several current tests in Mississippi and Alabama. New wildcat tests were announced, making up for declined activity of abandoned wildcats. Mississippi leasing is heaviest in the central southeast sector, and Alabama activity remains strong. The play is extending more each week to the east, with Florida now included in the active territory. Geophysical work follows leasing trends, with about 54 crews active, mainly in the central and east central sections of Mississippi, and 10 parties now working Alabama.

Tinsley

The Tinsley field was extended on the east by a good drill-stem test in a north-end well last week. Magnolia's No. 1 Milner, with Woodruff sand at 4,870-87 ft., recovered 1,400 ft. of oil and no salt water on a 10-minute drill-stem test of the sand, and 7-in. casing has been set in the well to 4,877 ft. for early completion. This is the first well to reach the sand on the east, where one other test is drilling and four locations have been staked. Four other Tinsley wells are on the sand and are due for completion over the week end, while four additional tests are near critical depth.

Production at Tinsley has broken through the former pipe-line proration totals, reaching a record high this past week, with large runs to storage. A daily average of 14,294 bbl., about 3,000 bbl. more than the previous high production was reached last week. Of the week's total of about 100,000 bbl., approximately 80,561 bbl. were run to storage in the field and at St. Rose, Destrahan and Good Hope, La. Two refineries at Mobile, Ala., and Vicksburg, Miss., took a total of 13,110 bbl. and the remaining 6,330 bbl. were removed to Baton Rouge. The break occurred when operators with outlets for crude other than the field-wide purchases moving to Baton Rouge increased production and offsetting operators resorted to runs to storage to prevent drainage. Rumors of plans for erection of other refineries in Mississippi to process Tinsley crude persist, without verification.

Outpost tests at Pickens, Mississippi's other oil field in Yazoo County, continued unsuccessful. Exchange-Kingwood, 5 Wilburn, ¼ mile southeast of production is still shut down with a fishing job. Operators have recovered 2,500 ft. of the 4,824 ft. of drill-stem stuck. The same operators' No. 6 Wilburn, after coring a sand above the Wilburn sand, at 4,844-59 ft. showing good odor and some gas bubbles, attempted a drill-stem test but drilled ahead after its failure. No good shows were encountered below 4,859 ft., although a few streaks bleeding a black asphaltic oil at 4,893-4,904 ft. were found, and a side-wall core taken at 4,838 ft. showed some odor and stain of oil. Operators are drilling below 5,657 ft. to explore deeper horizons.

Wildcatting

Other deep tests are active in Scott, Montgomery and Jefferson Davis counties, Mississippi, and in Mobile County, Alabama. The record depth for a Mississippi wildcat has been passed by the Gulf (E. L. Martin), 1 Newell Mineral Lease Co., in Scott County. The test ran very high through the Lower Cretaceous formations, but encountered no shows. After shutting down at previous contract depth, it is again active. Operators have deepened it to 9,035 ft., where it is shut down for repairs.

To the north in Montgomery County, Gulf, 1 Parker, having drilled through most of the Lower Cretaceous, is making hole below 4,177 ft. To the south in Jefferson Davis County, J. W. Richardson, 1 M. Berry, is shut down for repairs after reaching total depth of 8,102 ft. in Lower Cretaceous chalk.

One of Alabama's deep Mobile County tests is again under way, as W. L. McClanahan, 1 J. R. Lockhart, at Bayou Labatre resumed operations and is coring below 6,600 ft. The well was shut down for several weeks at contract depth of 6,540 ft. before being deepened.

Three wildcats were abandoned during the past week in Monroe, Perry and Yazoo counties. The Monroe test, Willmut, 1 Rye, about 12 miles south of the old Amory gas field, failed to find shows and was abandoned at 2,745 ft. In Perry County, Fohs, 1 Bond Lumber Co., ran high from sample tops but drilled the Selma, Eutaw and Tuscaloosa without finding shows. Leon Dunn, 1 Pepper, was junked at 4,943 ft. without a fishing job. It was located west of Pickens. Southeast of Pickens, the Rowan, Hope & Thompson, 1 Cook, is a failure and will probably be abandoned after finding no oil show in the Wilburn sand.

Leasing on drilling requirements will bring wildcat tests to Attala County in November, Wayne County, in September, and Issaquena and Covington counties next year. A test in Marshall County, C. B. Blosser, 1 C. Stansback, in 19-3s-4w, was staked during the past week.

A new test for Alabama, on the Bear Creek dome, is under way. Frederic Mellen et al, 1 Alsobrook, 10-4s-15w, in the extreme northwest corner of the state, has been spudded.

MISSISSIPPI FIRST REPORTS

Marshall County—Wildcat

C. B. Blosser, 1 Charlotte Stansback, SE SE 19-3s-4w.

Tinsley—Yazoo County

Union Producing Co., 1 E. Robinette, 2,053 ft. E, 642.7 ft. S, NW cor. 19-10-2.

Union Producing Co., 1 J. G. Harris, NW cor. 19-10-2.

MISSISSIPPI COMPLETIONS

Monroe County—Wildcat

Willmut Gas & Oil Co., 1 Rye, 300 ft. N and E, C NE 22-15s-17w. T.D. 2,745 ft. Dry.

Perry County—Wildcat

Fohs Oil Co., 1 Bond Lumber Co., 907 ft. N, 660 ft. W, C 17-1s-11w. T.D. 7,592 ft., top Eutaw 7,235 ft. Dry.

Yazoo County—Wildcat

Leon Dunn, 1 H. H. Pepper, 1,024 ft. E, 330 ft. S, NW cor. 26-12n-2e. Junked, T.D. 4,943 ft.

MISSISSIPPI WILDCATS

Grenada County

H. H. Womble and D. H. Williams, 1 Connecticut General Life Ins. Co., 200 ft. S, 150 ft. W, NE cor. NW SE 28-23n-3e. Drlg. 228 ft.

Hinds County

Harvey Robinson and J. P. Frame, 1 Alford, SW SE 18-6n-1e. Set 10¾-in. csg. 750 ft.; D.S. stuck 3,094 ft.; rec. all but 200 ft.; wsg. to btm.

Jefferson Davis County

Exchange, 1 J. J. Newman Lbr. Co., SE SE NE 36-7n-19w. Fsg. 2,446 ft.; sh.

J. W. Richardson, 1 M. Berry, C SW NE 15-9n-19w. T. Selma 6,642 ft.; S.D., repr. rig 8,102 ft.

Jones County

T. N. Smith, 1 Hollifield, NW SW NW 20-8n-12w. Drlg. 637 ft.

R. W. Williams, 1 Eastman-Gardner, NE SW 7-8n-12w. Drlg. 5,013 ft.

Kemper County

R. M. Crabb et al, 1 Land, NW NE 12 10n-14e. S.D. 550 ft. (cor.)

Montgomery County

W. O. Allen, 1 J. C. Palmertree, SE SW 30-17-7e. M.I.M.

Gulf, 1 Fred Parker, SE SW 22-19n-7e. T. Selma 450 ft.; T. Eutaw 1,265 ft. T. Tuscaloosa 1,575 ft.; drlg. 4,177 ft.

E. R. Henderson, 1 Columbian Mutual Life Ins. Co., 36-21-5e. Drlg. 2,749 ft.

Prentiss County

Home Dev., 1 Mrs. A. Allen, 8-7s-9e. Drlg 1,917 ft.

Scott County

Gulf Ref. Co. (E. L. Martin), 1 Newell Mineral Lse. Co., N½ NE NE 5-6n-7e. S.D. repairs 9,035 ft.

Tallahatchie County

I. P. Lerew, 1 L. Westbrook, SE SE 18 23n-2w. Set 9⅝-in. csg. 207 ft.

Yazoo County

Exchange and Kingwood, 6 Wilburn 1,320 ft. S, 440 ft. W, NE cor. 31-12-3 Took sidewall cores; 4,837-ft. sd., stain and odor oil; 4,877-80 ft. sd., no shows; drlg. ahead 5,660 ft.

Hassle Hunt, 3-B Lammons, SE SE 36 11n-3w. Cd. 4,960-85 ft.; rec. sd.; set 5½-in. csg. 5,531 ft.; T.D. 5,570 ft.; W.O.C.

E. C. Johnston, 5-B Brumfield, NW SE 2-10-3. Set 5½-in. csg. 4,754 ft.; swbg. in.

Jones & O'Brien Bros., 3-C Stevens, SE NE 10-13-3. Drlg. bl. sh. 4,550 ft.

Magnolia, 1 Milner, NW NW 7-10-2. Woodruff sd 4,870-87 ft.; D.S.T., rec. 1,400 ft. oil; set 7-in. csg. 4,877 ft.; W.O.C.

Magnolia, 2 J. J. Milner, SW SW 6-10-2 Drlg. 4,556 ft.

Petroleum Exploration, 1 L. E. Vandevere, 440 ft. N, 330 ft. E, SW cor., SW SE 25-13n-1w, spudded, set surf. csg. 600 ft.; W.O.C.

Rowan, Hope & Thompson, 1 Cook, 440 ft. S, 330 ft. E, NW cor. 6-11n-3e. Drlg 4,880 ft.

Slick-Urschel Oil, 8 Slick est., NE SE 35-10-3. R.U. and S.D.

Union Prod., 1 Adcock, SE NE 24-10-3 Drlg. bl. sh. 4,617 ft.

Union Prod., 1 Powell, SE SW 36-11-3 Cd. oil sd. and strks. L. & sh. 5,358-96 ft.; drlg. sh. 6,977 ft.

Union Prod., 5 Twiner, 2,019 ft. S, 2,118 ft. W, NE cor. 1-10-3. Tstd. S.W. and oil 5,454-96 ft.; set 7-in. csg.; perf. 5,466-72 ft.; washing in.

ALABAMA FIRST REPORTS

Colbert County—Wildcat

Frederic Mellen & Gear, 1 Mrs. W. B. Alsobrook, 8½ SW NW 10-4s-15w.

ALABAMA WILDCATS

Fayette County

B. L. Fillingame et al, 1 Ala. Educ. Assn., NW SW 3-16s-12w. T.D. 65 ft.; W.O. surf. csg.

Franklin County

E. O. Heath, 1 W. O. Hester, SW SW 4-6s-12w. R.U.C.T.

Lawrence County

D. V. Mann et al, 1 Jackson, NE NE 30-7s-6w. Set surf. csg.; drlg. 1,600 ft., S.G.

Marion County

Seaboard, 1 Clark et al, 360 ft. W, 660 ft. N, SE cor. SE SW 28-11s-14w. Drlg. hd. L. 2,183 ft.

Mobile County

Tom Daly et al, 1 Fort, NW SE SE 2-6s-4w. S.D. 6,518 ft.; will deepen to 8,500 ft.

W. L. McClanahan, 1 J. R. Lockhart, 300 ft. N, 150 ft. W, SE cor., NW SW 24-7s-3w. Cg. 6,600 ft.

LEGAL

Department of the Interior, United States Land Office, Cheyenne, Wyoming. Notice is hereby given that a lease of the oil and gas deposits in lot 3 Sec. 25, T. 56 N., R. 97 W., 6th P.M., 51.46 acres, in the Byron oil and gas field, Wyoming, is offered to the responsible qualified bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in Circular 1386, at the sale to be held in the office of the Register of the district land office at Cheyenne, Wyoming, at 10:00 o'clock A.M., on September 25, 1940. The successful bidder will be required to deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the bid, and file a showing of qualifications to receive the lease, required by section 7 of General Land Office Circular 1386. The remaining four-fifths of the amount bid, together with the annual rental in advance, at the rate of $1.00 per acre, must be paid and a $5000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

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B. of M. Report for Six Months Shows Improved Demand

THE production of crude petroleum continued to decline in June, when the daily average was 3,723,000 bbl., or about 90,000 bbl. below the level in May, according to the Bureau of Mines, U. S. Department of the Interior. However, the output in June 1940 was 7 per cent higher than a year ago.

Illinois' daily production increased about 60,000 bbl. to a new peak of 506,500 bbl. Subsequent declines indicate this may remain as the highest monthly average for some time. California and Kansas registered small gains, Louisiana and Oklahoma minor declines, but the important change was in Texas, where the output fell from 1,408,100 bbl. daily in May to 1,272,600 bbl. daily in June. All of the major districts of the state shared in this decrease.

Crude runs to stills in June were virtually unchanged from May, hence the material decline in crude-oil production was reflected in stocks, which showed little change in June compared with a material gain in May.

Refined Products

The yield of gasoline increased somewhat in June (from 42.3 per cent in May to 43.1 in June) but remained considerably below what it was a year ago. On the other hand the distillate yield of 13.1 per cent in June 1940 was only 0.2 per cent higher than it was a year ago.

The domestic demand for motor fuel exceeded expectations in June, probably the result of pre-tax buying. The demand was 55,459,000 bbl., or 11 per cent higher than a year ago. Exports of motor fuel also exceeded the estimates as the collapse of France apparently had little effect on the shipments. The total for June was 2,581,000 bbl., of which 646,000 bbl. was aviation gasoline. Included in the latter figure are 106,000 bbl. of antiknock compounds and blending agents. Because of the heavy demand, the liquidation of gasoline stocks exceeded the normal, slightly more than 7,000,000 bbl. being withdrawn from inventories of finished gasoline in June.

The domestic demand for kerosene and both grades of fuel oil was higher than a year ago but the relative gains were not outstanding. Stocks of distillates registered a material build-up in June, particularly at terminals.

According to the Bureau of Labor Statistics, the price index of petroleum products in June 1940 was 50.0, compared with 50.7 in May 1940 and 52.5 in June 1939.

The crude-oil capacity represented by the data in this report was 4,301,000 bbl., hence the operating ratio was 84 per cent, compared with 83 per cent in May and 85 per cent in June 1939.

UNITED STATES SUPPLY AND DEMAND

Six months, 1940 and 1939 (All figures in thousands of barrels)

Crude Oil

6 Months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude June 30§
1940	706,043	682,978	*23,065	*3.4	687,901	18,142	656,563	26,415	261,971
Daily average	3,879	3,753	.....	..	3,780	100	3,607	145	.....
1939	639,011	641,517	2,506	0.4	623,391	15,620	606,568	34,949	273,314
Daily average	3,530	3,544	.....	..	3,444	86	3,351	193	.....
Increase, 1940	67,032	41,461	.....	..	64,510	2,522	49,995	†8,534	†11,343
	10.5%	6.5%	.....	..	10.3%	16.1%	8.2%	†24.4%	†4.2%

Refinery Products—Motor Fuel

6 Months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks June 30§
1940	303,266	291,712	*11,554	*3.9	303,202	64	278,622	13,090	93,276
Daily average	1,666	1,603	.....	..	1,666	.....	1,531	72	.....
1939	291,978	281,613	*10,365	*3.7	291,978	.....	258,218	23,395	81,144
Daily average	1,613	1,556	.....	..	1,613	.....	1,426	129	.....
Increase, 1940	11,288	10,099	.....	..	11,224	.....	20,404	†10,305	12,132
	3.8%	3.6%	.....	..	3.8%	.....	7.9%	†44.0%	11.3%

Kerosene

1940	36,573	37,339	766	2.1	36,573	.....	35,048	2,291	6,810
1939	33,937	33,787	*150	*0.4	33,937	.....	30,062	3,725	7,949
Increase, 1940	2,636	3,552	.....	..	2,636	.....	4,986	†1,434	†1,139
	7.8%	10.5%	.....	..	7.8%	.....	16.6%	†38.5%	†14.3%

Gas Oil and Residual Fuel Oil¶

1940	266,168	272,980	6,812	2.5	250,132	16,036	253,944	19,036	124,733
1939	237,383	252,424	15,041	6.0	228,579	8,804	227,129	25,295	130,282
Increase, 1940	28,785	20,556	.....	..	21,553	7,232	26,815	†6,259	†5,549
	12.1%	8.1%	.....	..	9.4%	82.1%	11.8%	†24.7%	†4.3%

Gas Oil and Distillate Fuels

1940	94,697	98,133	3,436	3.5	93,111	1,586	86,807	11,326	33,583
1939	79,725	87,137	7,412	8.5	79,554	171	71,219	15,918	31,877
Increase, 1940	14,972	10,996	.....	..	13,557	1,415	15,588	†4,592	1,708
	18.8%	12.6%	.....	..	17.0%	827.5%	21.9%	†28.7%	5.4%

Residual Fuel Oils

1940	171,471	174,847	3,376	1.9	157,021	14,450	167,137	7,710	91,148
1939	157,658	165,287	7,629	4.6	149,025	8,633	155,910	9,377	98,405
Increase, 1940	13,813	9,560	.....	..	7,996	5,817	11,227	†1,667	†7,257
	8.8%	5.8%	.....	..	5.4%	67.4%	7.2%	†17.8%	†7.4%

Lubricating Oils

1940	19,584	18,565	*1,019	*1.6	18,584	.....	11,806	6,759	8,161
1939	16,041	16,311	270	1.7	16,041	.....	11,053	5,258	7,427
Increase, 1940	3,543	2,254	.....	..	3,543	.....	753	1,501	734
	22.1%	13.8%	.....	..	22.1%	.....	6.8%	28.5%	9.9%

Petroleum Wax (Thousands of pounds)

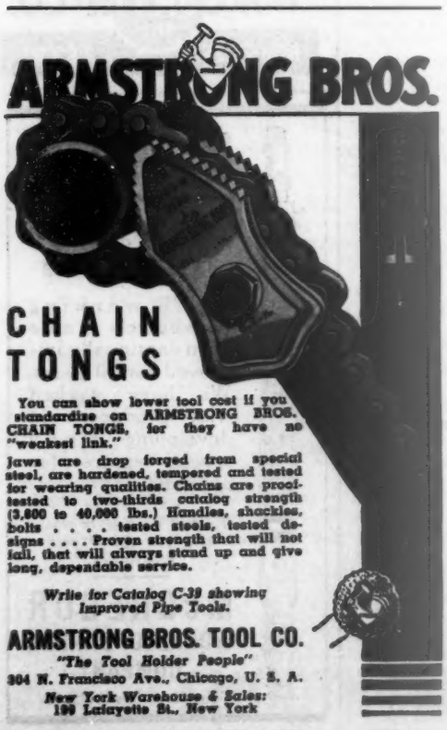
1940	311,389	276,661	*34,728	*12.6	271,880	39,509	146,855	129,806	110,346
1939	238,244	255,980	17,736	6.9	222,320	15,924	131,022	124,958	111,604
Increase, 1940	73,145	20,681	.....	..	49,560	23,585	15,833	4,848	†1,258
	30.7%	8.8%	.....	..	22.3%	148.1%	12.1%	3.9%	†1.1%

*Excess supply. †Decrease. ‡Crude only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products based on refinery shipments. ‖Does not include 13,334,000 bbl. of heavy oils in California. Comparable figure for June 30, 1939, 14,207,000 bbl.

Crude Oil Run to Stills and Total All Oils

6 months—	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline‡	Natural gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils June 30*
1940	38,658	70,131	645,408	42.7	26,341	754,378	712,938	566,210
Daily average	212	385	3,546	...	145	4,145	3,917	.....
1939	28,436	93,832	596,073	44.6	24,850	677,690	676,876	567,860
Daily average	157	516	3,293	...	136	3,744	3,740	.....
Increase, 1940	10,222	†23,701	49,335	...	1,491	76,688	36,062	†1,650
	36.0%	†25.3%	8.3%	...	5.0%	11.3%	5.3%	†0.3%

*Total all oils include crude and refined products, natural gasoline and benzol. Stocks June 30, 1940, represented 145 days' supply, which compares to 152 days on the same date in 1939. †Decrease. ‡Does not include natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.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Summary of Operations in All Fields for July

SUMMARY OF OPERATIONS

Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Eastern fields	547	804	34	77
Ohio	134	463	38	53
Kentucky	48	1,423	18	6
Michigan	92	5,158	57	6
Illinois	326	138,311	78	1
Indiana	33	2,221	17	0
Kansas	148	32,367	29	7
Oklahoma	154	10,201	76	17
Missouri	6	0	5	1
Nebraska	7	1,112	4	0
N. Central Texas	285	64,226	108	2
West Texas	178	146,503	9	1
Texas Panhandle	72	14,851	1	10
E. Texas and Border	47	2,748	84	2
Gulf Coast Texas	112	22,995	15	0
Southwest Texas	147	13,850	45	5
S.E. New Mexico	53	10,517	8	1
Arkansas	18	2,140	7	1
N. Louisiana	53	3,020	16	7
Gulf Coast La.	107	24,245	22	2
Mississippi	14	3,445	6	0
Colorado	3	19	2	0
Montana	24	2,335	3	2
Wyoming	13	5,113	4	1
N.W. New Mexico	5	150	4	0
Ttl. July	2,626	508,217	690	202
Ttl. June	2,709	665,936	581	165
Difference	83	157,719	109	67

Rigs and Wells Drilling

Field—	Rigs	Drlg.	Ttl.
Eastern fields	77	506	583
Ohio	47	175	222
Kentucky	13	83	96
Michigan	16	134	150
Illinois	59	385	444
Indiana	11	78	89
Missouri	0	17	17
Nebraska	3	18	21
South Dakota	0	1	1
Arizona	0	7	7
Iowa	0	3	3
Kansas	26	236	262
Oklahoma	28	268	296
North Central Texas	107	253	360
West Texas	62	220	282
Texas Panhandle	34	80	114
East Texas and Border	22	72	94
Gulf Coast Texas	29	83	112
Southwest Texas	26	150	176
S.E. New Mexico	23	92	115
Arkansas	7	28	35
North Louisiana	8	59	67
Louisiana Gulf Coast	23	120	143
Mississippi	11	38	49
Alabama	1	7	8
Georgia	0	4	4
Florida	0	5	5
Colorado	3	33	36
Wyoming	9	80	89
Montana	6	51	57
Utah	3	5	8
N.W. New Mexico	1	12	13
Ttl. July	655	3,303	3,958
Ttl. June	786	3,672	4,458
Difference	131	369	500

KANSAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barber	3	611	1	0	0	4
Barton	12	2,948	3	0	3	25
Butler	8	112	4	0	0	12
Cowley	7	663	4	1	0	11
Dickinson	0	0	0	0	0	1
Douglas	1	0	1	0	0	2
Ellis	15	4,267	0	0	1	15
Ellsworth	14	3,796	2	0	5	24
Grant	1	0	0	1	0	2
Greenwood	6	128	0	0	2	20
Haskell	0	0	0	0	0	2
Jefferson	0	0	0	0	0	1
Johnson	3	0	2	1	0	5
Kearny	0	0	0	0	0	1
McPherson	18	4,955	3	0	3	25
Marion	4	115	1	0	1	7
Ness	1	237	0	0	0	1
Nemaha	0	0	0	0	0	1
Pawnee	0	0	0	0	0	1
Phillips	0	0	0	0	0	1
Pratt	2	180	0	1	1	6
Reno	0	0	0	0	0	4
Rice	14	3,078	3	3	3	10
Rooks	2	178	1	0	1	7
Rush	2	350	1	0	0	0
Russell	25	7,727	2	0	4	29
Sedgwick	0	0	0	0	0	2
Stafford	10	3,022	1	0	2	17
Stevens	0	0	0	0	0	1
Trego	0	0	0	0	0	1
Ttl. July	148	32,367	29	7	26	236
Ttl. June	225	59,386	46	7	42	245
Difference	77	27,019	17	0	16	9

OKLAHOMA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	1	0	1	0	0	2
Beckham	1	0	1	0	1	1
Caddo	13	4,230	6	1	0	14
Carter	6	105	2	1	3	10
Coal	1	0	1	0	0	1
Comanche	1	8	0	0	0	2
Cotton	2	0	1	1	0	2
Creek	13	244	8	0	2	15
Cleveland	1	0	1	0	0	1
Dewey	1	0	1	0	0	0
Garfield	0	0	0	0	0	1
Garvin	1	0	1	0	0	1
Grady	3	38	1	0	0	3
Grant	1	0	1	0	0	0
Hughes	1	0	0	1	1	4
Haskell	1	0	0	1	0	0
Jackson	1	47	0	0	0	5
Jefferson	1	0	1	0	0	0
Johnston	0	0	0	0	0	1
Kay	2	14	1	0	0	4
Kingfisher	0	0	0	0	0	1
Kiowa	4	0	4	0	1	5
Latimer	2	0	0	2	0	0
Lincoln	8	0	7	1	1	6
Logan	2	0	1	1	0	1
Marshall	1	0	1	0	2	7
Muskogee	3	20	2	0	0	0
Noble	0	0	0	0	0	4
Okfuskee	5	349	1	0	1	12
Oklahoma	5	1,658	0	0	0	12
Okmulgee	8	150	4	0	2	9
Osage	7	515	3	0	1	17
Pawnee	5	749	3	0	0	5
Payne	5	24	4	0	3	0
Pontotoc	9	574	2	1	2	10
Pottawatomie	9	1,101	3	0	1	16
Seminole	6	126	4	0	2	12
Stephens	6	22	4	0	0	8
Texas	3	0	0	3	1	0
Tillman	1	189	0	0	0	5
Tulsa	6	15	3	1	2	16
Wagoner	8	23	3	3	0	9
Washita	0	0	0	0	0	1
Miscellaneous	0	0	0	0	2	45
Ttl. July	154	10,201	76	17	28	268
Ttl. June	166	17,767	57	16	31	292
Difference	12	7,566	19	1	3	24

NORTHWEST NEW MEXICO

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bernalillo	0	0	0	0	0	1
McKinley	1	150	0	0	1	3
Rio Arriba	1	0	1	0	0	0
San Juan	3	0	3	0	0	3
San Miguel	0	0	0	0	0	1
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	1
Valencia	0	0	0	0	0	2
Ttl. July	5	150	4	0	1	12
Ttl. June	3	150	2	0	0	12
Difference	2	0	2	0	1	0

SOUTHEAST NEW MEXICO

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Chaves	0	0	0	0	0	2
De Baca	0	0	0	0	0	1
Dona Ana	0	0	0	0	0	2
Eddy	18	1,793	5	0	11	46
Lea	35	8,724	3	1	12	36
Luna	0	0	0	0	0	1
Otero	0	0	0	0	0	2
Roosevelt	0	0	0	0	0	1
Socorro	0	0	0	0	0	1
Ttl. July	53	10,517	8	1	23	92
Ttl. June	56	14,328	10	1	21	101
Difference	3	3,811	2	0	2	9

TEXAS PANHANDLE

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Carson	11	1,975	0	3	2	10
Childress	0	0	0	0	0	1
Gray	27	5,575	1	0	10	17
Hall	0	0	0	0	0	1
Hutchinson	25	7,018	0	1	15	33
Moore	5	0	0	5	2	8
Ochiltree	0	0	0	0	0	1
Sherman	0	0	0	0	0	1
Swisher	0	0	0	0	0	1
Wheeler	4	283	0	1	5	7
Ttl. July	72	14,851	1	10	34	80
Ttl. June	42	8,341	3	6	37	119
Difference	30	6,510	2	4	3	39

NORTH CENTRAL TEXAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	50	22,185	9	0	21	32
Brown	3	22	0	0	0	4
Baylor	0	0	0	0	3	7
Callahan	13	45	11	0	3	9
Clay	28	4,043	22	0	12	14
Coleman	4	880	0	1	3	8
Comanche	2	0	2	0	1	4
Cooke	13	2,127	0	0	7	8
Coryell	1	0	1	0	0	0
Denton	1	0	1	0	1	2
Erath	0	0	0	0	0	2
Eastland	4	383	2	0	1	6
Fannin	0	0	0	0	0	1
Fisher	0	0	0	0	0	1
Foard	0	0	0	0	0	1
Grayson	0	0	0	0	0	1
Hamilton	0	0	0	0	0	1
Hardeman	0	0	0	0	2	4
Hood	0	0	0	0	0	1
Jack	14	2,733	4	6	3	10
Johnson	0	0	0	0	0	1
Jones	18	1,796	6	0	2	11
Montague	12	9,904	4	0	7	10
Palo Pinto	3	10	2	0	2	5
Parker	0	0	0	0	0	4
Runnels	1	93	0	0	0	4
Shackelford	20	1,021	7	0	10	21
Stephens	4	0	4	0	2	6
Tarrant	0	0	0	0	0	3
Taylor	3	406	2	0	0	3
Throckmorton	0	0	0	0	0	3
Wichita	55	15,521	16	0	21	31
Wilbarger	7	771	3	0	2	7
Young	29	2,286	12	1	4	19
Ttl. July	285	64,226	108	2	107	253
Ttl. June	223	64,915	64	3	153	309
Difference	62	689	44	1	46	56

WEST TEXAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	6	3,095	0	0	3	4
Brewster	0	0	0	0	0	1
Crane	8	13,680	0	0	8	20
Concho	0	0	0	0	0	2
Cochran	3	1,465	0	0	0	2
Crockett	5	3,564	2	0	3	9
Culberson	0	0	0	0	0	1
Dawson	0	0	0	0	0	1
Ector	47	41,100	0	0	12	45
El Paso	0	0	0	0	0	1
Gaines	21	14,421	2	0	8	20
Glasscock	1	0	1	0	0	0
Hockley	8	7,962	0	0	0	7
Howard	1	0	1	0	0	6
Hudspeth	0	0	0	0	0	2
Loving	1	70	0	0	0	0
Mitchell	0	0	0	0	0	4
Nolan	0	0	0	0	0	1
Pecos	12	602	2	0	4	11
Presidio	0	0	0	0	0	2
Reagan	0	0	0	0	0	1
Reeves	0	0	0	0	0	1
Schleicher	1	0	0	1	0	1
Scurry	3	377	0	0	0	7
Stonewall	0	0	0	0	0	2
Sutton	0	0	0	0	0	1
Terrell	0	0	0	0	0	1
Terry	1	1,126	0	0	1	4
Tom Green	0	0	0	0	0	1
Upton	6	10,946	0	0	1	8
Ward	10	6,199	0	0	3	13
Winkler	5	1,992	0	0	2	10
Yoakum	39	39,904	1	0	17	31
Ttl. July	178	146,503	9	1	62	220
Ttl. June	166	136,391	8	2	107	251
Difference	12	10,112	1	1	45	31

SOUTHWEST TEXAS DISTRICT

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Agua Dulce	2	40	0	0	0	3
Adami	0	0	0	0	0	3
Alice	0	0	0	0	0	1
Baffin Bay	1	112	0	0	0	0
Ben Bolt	2	653	0	0	0	2
Boyle	0	0	0	0	0	2
Bridwell	1	100	0	0	1	0
Bruni	0	0	0	0	0	1
Casa Blanca	2	35	0	0	0	2
Chacon Lake	1	2	0	0	1	0
Charco Redondo	1	0	1	0	0	0
Cedro Hill	3	114	0	0	1	1
Chiltipin	0	0	0	0	0	1
Colorado	6	1,468	0	0	1	3
Clara Driscoll	0	0	0	0	0	3
Coleto Creek	0	0	0	0	0	2
Comitas	1	15	0	0	0	0
Dale	1	0	1	0	1	0
Darst Creek	1	17	0	0	0	0
Driscoll	1	105	0	0	0	1
East Fitzsimmons	1	12	0	0	0	0
East Flour Bluff	0	0	0	0	0	2
East Placedo	0	0	0	0	0	1
East White Point	3	273	0	0	0	0
East Premont	0	0	0	0	0	1
Elm Creek	2	3	1	0	0	2
Fagan	1	75	0	0	0	1
Fitzsimmons	1	30	0	0	0	0
Gas Ridge	1	2	0	0	0	1
Glen	9	2,146	0	0	2	3
Hayden	0	0	0	0	0	2
Gallagher	0	0	0	0	0	1
Heyser	2	104	0	1	0	1
Hoffman	4	285	0	1	0	2
Kelsey	2	319	0	0	0	1
Keeran	0	0	0	0	0	2
La Rosa	1	1,800	0	0	0	2
Luling	0	0	0	0	0	1
Lundell	1	0	0	1	0	1
Manila	0	0	0	0	0	2
Minnie Bock	1	43	0	0	0	1
Margo	1	0	1	0	1	0
McCampbell	4	338	0	0	0	5
McFaddin	2	140	0	0	0	3
Mirando Valley	0	0	0	0	0	1
Midway	2	130	0	0	1	1
Mt. Lucas	0	0	0	0	0	1
N. McFaddin	0	0	0	0	0	1
Nueces Bay	1	0	0	1	0	1
Oakville	2	168	0	0	0	1
O'Hern	1	0	0	1	0	0
Orange Grove	0	0	0	0	1	2
Piedra de Lumbre	1	0	1	0	0	0
Premont	1	3	0	0	0	1
Pearsall	0	0	0	0	1	2
Plymouth	0	0	0	0	0	1
Refugio	0	0	0	0	0	1
Robstown	1	0	1	0	0	0
Rockdale	0	0	0	0	1	0
Ricaby	1	0	1	0	0	1
Riddle	0	0	0	0	0	1
Rincon	5	901	0	0	1	1
St. Charles	1	48	0	0	0	0
Salt Flat	0	0	0	0	0	1
San Jose	0	0	0	0	0	1
Samfordyce	4	212	1	0	0	2
South Clara Driscoll	2	131	0	0	1	2
South Alfred	3	187	1	0	1	1
Stratton	1	30	0	0	0	1
Sun	1	57	0	0	0	2
S. Calliham	1	0	1	0	0	1
Tarancahuas	10	1,243	1	0	0	1
Telferner	2	0	2	0	0	1
Thomaston	0	0	0	0	0	1
Tomoconnor	1	628	0	0	0	1
Victoria	0	0	0	0	0	1
Volpe	2	98	0	0	1	0
Wade City	11	1,721	0	0	1	5
West Cole	2	62	0	0	1	1
White Creek	0	0	0	0	0	1
Miscellaneous	32	0	32	0	7	49
Ttl. July	147	13,850	45	5	26	150
Ttl. June	183	16,042	59	9	35	152
Difference	36	2,192	14	4	9	2

EASTERN TEXAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	3	100	0	2	1	7
Angelina	0	0	0	0	0	1
Bowie	1	0	1	0	0	1
Camp	0	0	0	0	0	1
Delta	0	0	0	0	0	1
Falls	0	0	0	0	1	0
Franklin	3	907	0	0	0	1
Freestone	0	0	0	0	0	0
Gregg	15	686	0	0	3	2
Henderson	1	158	0	0	3	10
Houston	0	0	0	0	1	3
Kaufman	1	0	1	0	0	2
Leon	0	0	0	0	0	2
Limestone	0	0	0	0	0	1
Red River	1	0	1	0	0	0
Rusk	1	11	0	0	4	7
Robertson	0	0	0	0	0	1
Smith	1	271	0	0	5	8
Titus	3	250	2	0	0	0
Upshur	5	200	0	0	1	0
Van Zandt	0	0	0	0	1	1
Ttl. July	35	2,583	5	2	22	50
Ttl. June	33	5,055	8	1	21	56
Difference	2	2,472	3	1	1	6

EAST TEXAS BORDER

County—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Bowie	0	0	0	0	0	2
Harrison	1	0	0	1	0	4
Marion-Rodessa	0	0	0	0	0	1
Marion-Other	9	165	4	0	0	11
Sabine	0	0	0	0	0	1
Shelby	2	0	2	0	0	5
Ttl. July	12	165	6	1	0	24
Ttl. June	8	165	4	1	3	22
Difference	4	0	2	0	3	2

*Gas production: Harrison County, 6,000,000 cu. ft.

COASTAL LOUISIANA DISTRICT

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anse La Butte	4	982	0	0	1	4
Bancroft	1	216	0	0	0	1
Barataria	0	0	0	0	0	3
Bateman Lake	0	0	0	0	0	1
Bayou Blue	0	0	0	0	0	3
Bayou Boullion	1	119	0	0	1	0
Bayou des Allemands	1	138	0	0	0	0
Bayou de Glaize	0	0	0	0	0	1
Bay St. Elaine	0	0	0	0	0	1
Bayou Pigeon	0	0	0	0	0	1
Caillou Island	1	35	0	0	0	1
Charenton	5	213	2	0	0	3
Choctaw	1	299	0	0	0	0
Chalkley	3	1,137	0	0	0	1
Chacahoula	1	292	0	0	0	2
Cheneyville	2	288	1	0	0	1
Cameron Meadows	0	0	0	0	0	1
Darrow	0	0	0	0	0	1
Delta Farms	0	0	0	0	0	1
East Baton Rouge	3	364	1	0	0	3
Eola	7	2,583	0	0	0	3
Edgerly	1	0	1	0	0	0
Erath	2	0	2	0	0	1
Fausse Point	2	25	0	1	0	1
Four Isle	0	0	0	0	0	1
Gibson	1	861	0	0	0	0
Grand Bay	1	292	0	0	0	2
Golden Meadow	8	2,309	0	0	2	6
Gillis	2	221	0	0	0	0
Garden Island	2	875	0	0	1	0
Grand Lake	2	484	0	0	1	1
Gueydan	0	0	0	0	0	1
Hackberry	4	371	2	0	0	4
Happytown	0	0	0	0	0	1
Horseshoe Bayou	0	0	0	0	0	1
Jeanerette	1	0	1	0	1	1
Jennings	4	876	0	0	2	2
Jefferson Island	1	0	1	0	0	1
Kenilworth	1	0	1	0	0	0
La Fourche Crossing	1	0	1	0	2	1
Lafitte	3	1,040	0	0	1	2
Lake Long	0	0	0	0	0	1
Lake Mongoulois	1	75	0	0	1	0
Lake Hermitage	0	0	0	0	0	1
Lake Pelto	0	0	0	0	1	0
La Place	0	0	0	0	1	0
Lake Salvador	0	0	0	0	0	1
Lockport	0	0	0	0	0	1
Leesville	1	350	0	0	0	1
Mermentau	1	120	0	0	0	0
Neale	2	703	0	0	0	4
N. Crowley	2	1,102	0	0	0	2
N. Elton	1	40	0	0	0	0
New Iberia	3	661	0	0	1	4
Paradis	0	0	0	0	0	2
Port Barre	2	731	0	1	1	0
Plumb Bob	0	0	0	0	0	1
Potash	1	519	0	0	0	1
Quarantine Bay	2	1,542	0	0	0	1
Raceland	0	0	0	0	0	1
Schooner Bayou	1	220	0	0	1	0
Sorrento	1	0	1	0	0	1

S. Roanoke	1	251	0	0	0	1
Starks	2	0	2	0	0	1
Sulphur	2	327	1	0	1	1
Valentine	0	0	0	0	0	1
Vermilion Bay	0	0	0	0	0	1
Ville Platte	10	2,343	0	0	1	8
Venice	0	0	0	0	0	1
Vinton	0	0	0	0	0	1
West Lake Verrett	0	0	0	0	0	1
West Cote Blanche	1	324	0	0	1	0
W. Gueydan	1	0	1	0	0	0
White Castle	1	667	0	0	0	1
Woodlawn	1	250	0	0	0	1
Miscellaneous	4	0	4	0	2	22
Ttl. July	107	24,245	22	2	23	120
Ttl. June	87	18,100	24	1	29	122
Difference	20	6,145	2	1	6	2

NORTH LOUISIANA

Parish—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Bienville	1	0	1	0	0	1
Bossier	1	250	0	0	0	5
Caddo†	28	1,285	7	0	4	25
Catahoula	2	0	2	0	0	0
Claiborne	0	0	0	0	0	2
De Soto	0	0	0	0	0	2
Franklin	0	0	0	0	0	1
Grant	0	0	0	0	0	2
La Salle	11	1,280	3	1	3	9
Morehouse	1	0	0	1	0	0
Natchitoches	1	0	1	0	0	0
Ouachita	2	0	0	2	0	1
Red River	0	0	0	0	0	1
Sabine	2	15	1	0	0	4
Tensas	0	0	0	0	0	1
Union	2	0	0	2	0	1
Webster	2	190	1	1	1	4
Ttl. July	53	3,020	16	7	8	59
Ttl. June	57	4,130	9	8	9	61
Difference	4	1,110	7	1	1	2

*Gas production: La Salle Parish, 20,000,000 cu. ft.; Morehouse Parish, 3,754,000 cu. ft.; Ouachita Parish, 6,472,000 cu. ft.; Union Parish, 4,192,000 cu. ft.; Webster Parish, 1,692,000 cu. ft. †No Caddo Rodessa operations during July.

ARKANSAS

County—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Clark	0	0	0	0	0	3
Columbia	7	1,410	2	0	2	3
Dallas	0	0	0	0	1	0
Faulkner	0	0	0	0	0	1
Hot Springs	1	0	1	0	0	0
Howard	0	0	0	0	0	1
Lafayette	0	0	0	0	0	4
Lonoke	0	0	0	0	0	2
Miller†	2	300	1	0	1	1
Nevada	1	0	1	0	0	2
Ouachita	0	0	0	0	0	2
Paluski	0	0	0	0	0	1
Saline	0	0	0	0	0	3
Sevier	0	0	0	0	0	1
Union	7	430	2	1	2	4
Yell	0	0	0	0	1	0
Ttl. July	18	2,140	7	1	7	28
Ttl. June	12	2,020	5	0	5	32
Difference	6	120	2	1	2	4

*Gas production: Union County, 5,000,000 cu. ft. †No Miller County Rodessa operations during July.

ALABAMA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Walker	0	0	0	0	0	1
Franklin	0	0	0	0	1	0
Houston	0	0	0	0	0	1
Lawrence	0	0	0	0	0	2
Marion	0	0	0	0	0	1
Mobile	0	0	0	0	0	2
Ttl. July	0	0	0	0	1	7
Ttl. June	2	0	2	0	0	6
Difference	2	0	2	0	1	1

GEORGIA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Clinch	0	0	0	0	0	2
Dade	0	0	0	0	0	1
Montgomery	0	0	0	0	0	1
Ttl. July	0	0	0	0	0	4
Ttl. June	0	0	0	0	0	4
Difference	0	0	0	0	0	0

MISSISSIPPI

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Attala	0	0	0	0	1	0
Choctaw	0	0	0	0	0	1
Clarke	1	0	1	0	0	0
Copiah	0	0	0	0	0	1
Grenada	0	0	0	0	1	0
Hinds	0	0	0	0	0	1
Holmes	0	0	0	0	0	1
Issequena	0	0	0	0	0	1
Itawamba	0	0	0	0	0	1
Jefferson Davis	0	0	0	0	1	1
Jones	0	0	0	0	0	2
Kemper	0	0	0	0	0	2
Lamar	0	0	0	0	0	1
Madison	0	0	0	0	0	3
Monroe	0	0	0	0	0	1
Montgomery	0	0	0	0	1	2
Neshoba	0	0	0	0	0	1
Oktibbeha	1	0	1	0	0	0
Perry	0	0	0	0	0	1
Pike	0	0	0	0	0	1
Prentiss	0	0	0	0	0	1
Rankin	0	0	0	0	1	0
Scott	0	0	0	0	0	1
Smith	1	0	1	0	0	0
Tallahatchie	0	0	0	0	1	0
Warren	0	0	0	0	1	1
Washington	0	0	0	0	0	1
Wayne	0	0	0	0	0	1
Yalobusha	0	0	0	0	1	1
Yazoo	11	3,445	3	0	3	11
Ttl. July	14	3,445	6	0	11	36
Ttl. June	17	5,990	9	0	5	35
Difference	3	2,545	3	0	6	3

FLORIDA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Dade	0	0	0	0	0	1
Levy	0	0	0	0	0	2
Suwannee	0	0	0	0	0	2
Ttl. July	0	0	0	0	0	5
Ttl. June	0	0	0	0	0	5
Difference	0	0	0	0	0	0

KENTUCKY

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Martin	3	160	0	1	5	1
Magoffin	1	5	0	0	2	3
Knott	2	0	0	1	3	5
Lee	0	0	0	0	0	2
Floyd	3	0	1	2	1	4
Elliott	0	0	0	0	0	1
Pike	1	0	1	0	2	6
Breathitt	0	0	0	0	0	1
Morgan	0	0	0	0	0	1
Wolfe	1	0	1	0	0	1
Greenup	0	0	0	0	0	1
Carter	0	0	0	0	0	1
Ballard	1	0	1	0	0	0
Breckinridge	1	0	0	1	0	4
Butler	2	20	0	0	0	2
Caldwell	1	0	1	0	0	0
Christian	0	0	0	0	0	2
Daviess	13	1,173	2	0	0	13
Hancock	1	0	0	1	0	4
Henderson	2	10	1	0	0	6
Hopkins	1	0	1	0	0	1
Larue	0	0	0	0	0	1
Logan	1	0	1	0	0	1
McLean	0	0	0	0	0	5
Ohio	14	55	8	0	0	17
Total July	48	1,423	18	6	13	83
Total June	71	844	31	16	5	85
Difference	23	579	13	10	8	2

INDIANA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Bartholomew	0	0	0	0	0	1
Boone	0	0	0	0	0	1
Daviess	0	0	0	0	1	4
Fountain	1	0	1	0	0	0
Gibson	13	1,782	3	0	4	25
Greene	1	0	1	0	0	1
Hamilton	0	0	0	0	0	1
Harrison	0	0	0	0	0	1
Hendricks	0	0	0	0	0	1
Huntington	0	0	0	0	0	1
Jay	0	0	0	0	1	4
Knox	0	0	0	0	0	1
Marion	1	0	1	0	0	1
Newton	0	0	0	0	0	2
Perry	0	0	0	0	0	1
Pike	0	0	0	0	0	2
Posey	8	439	2	0	2	10
Putnam	1	0	1	0	0	0
Randolph	0	0	0	0	0	2
Spencer	5	0	5	0	3	8
Starke	1	0	1	0	0	0
Sullivan	1	0	1	0	0	4
Vanderburg	1	0	1	0	0	1
Vigo	0	0	0	0	0	1
Ttl. July	33	2,221	17	0	11	78
Ttl. June	37	1,956	20	3	13	63
Difference	4	265	3	3	2	15

OHIO

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ashland	2	0	2	0	0	3
Allen	1	1	0	0	0	1
Auglaize	0	0	0	0	0	1
Athens	13	3	1	11	5	13
Belmont	0	0	0	0	0	1
Clinton	0	0	0	0	0	1
Coshocton	1	62	0	0	0	4
Cuyahoga	0	0	0	0	2	2
Fairfield	2	0	2	0	1	1
Gallia	1	0	0	1	1	0
Geauga	0	0	0	0	0	1
Guernsey	5	3	0	2	2	8
Harrison	0	0	0	0	0	1
Henry	0	0	0	0	0	1
Hocking	2	30	1	0	0	4
Holmes	4	0	0	4	5	3
Jackson	1	0	0	1	0	0
Jefferson	1	0	1	0	0	0
Knox	6	10	2	4	1	9
Lake	0	0	0	0	2	0
Lawrence	1	0	0	1	3	5
Licking	14	61	2	8	6	23
Lorain	5	40	1	0	2	4
Mahoning	0	0	0	0	0	1
Medina	22	73	10	1	4	10
Meigs	3	0	2	1	1	5
Monroe	8	13	2	4	1	9
Morgan	5	9	1	2	1	2
Muskingum	5	0	1	4	2	7
Noble	8	6	3	3	1	12
Perry	6	130	0	1	3	9
Putnam	0	0	0	0	0	1
Stark	3	0	2	1	2	7
Summit	0	0	0	0	0	2
Tuscarawas	3	0	1	2	0	8

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Van Wert	2	3	0	1	0	1
Vinton	0	0	0	0	0	1
Washington	7	17	2	1	2	12
Wayne	1	0	1	0	0	2
Wood	1	0	1	0	0	0
Wyandot	1	2	0	0	0	0
Ttl. July	134	463	38	53	47	175
Ttl. June	104	334	42	34	49	161
Difference	30	129	4	19	2	14

EASTERN FIELDS

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bradford	283	290	0	0	30	189
Allegheny	89	92	0	0	3	33
Middle dist.	21	44	0	3	0	15
Butler-Armstrong	8	9	1	2	4	7
Northern Oriskany	4	0	2	2	0	17
S.W. Penn.	19	15	4	14	5	42
S.E. Ohio	56	289	14	11	12	57
W. Virginia	67	65	13	45	23	146
Ttl. July	547	804	34	77	77	506
Ttl. June	556	907	29	43	82	578
Difference	9	103	5	34	5	72

TEXAS GULF COAST DISTRICT

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ace	1	170	0	0	0	0
Alta Loma	0	0	0	0	0	2
Anahuac	3	2,105	0	0	0	3
Anchor	2	102	1	0	0	0
Bay City	1	263	0	0	0	2
Batson	1	4	0	0	1	0
Barbers Hill	1	504	0	0	0	0
Big Creek	1	9	0	0	1	0
Boling	0	0	0	0	0	1
Cedar Point	1	149	0	0	1	0
Clear Lake	2	240	0	0	0	2
Clam Lake	1	62	0	0	0	1
Danbury	0	0	0	0	0	2
Dickinson	3	332	0	0	1	0
Esperson	2	384	0	0	0	2
Fannett	1	849	0	0	0	2
Fairbanks	2	235	0	0	0	1
Fig Ridge	1	84	0	0	0	0
Greens Lake	1	354	0	0	0	0
Ganado	1	40	0	0	0	0
Goose Creek	1	28	0	0	0	0
Hardin	1	77	0	0	0	1
Hastings	0	0	0	0	1	0
Hilje	2	86	1	0	0	2
Hull	1	206	0	0	1	1
Humble	2	112	0	0	1	0
League City	0	0	0	0	0	1
Labelle	1	78	0	0	1	0
Liverpool	1	187	0	0	1	0
Lolita	5	1,004	0	0	0	6
Lovells Lake	3	454	0	0	1	2
Manvel	1	81	0	0	1	0
Magnet	0	0	0	0	0	1
Markham	1	8	0	0	0	1
Martha	0	0	0	0	1	0
Ogburn	1	108	0	0	0	1
Old Ocean	5	1,547	0	0	3	6
Orange	1	0	1	0	1	0
Picketts Ridge	4	468	0	0	0	2
Pierce Junction	1	82	0	0	0	0
Port Neches	0	0	0	0	0	1
Raccoon Bend	0	0	0	0	0	1
Rockland	1	40	0	0	0	1
Seabreeze	0	0	0	0	0	1
Segno	4	1,521	0	0	1	3
Silsbee	1	585	0	0	0	0
South China	1	149	0	0	0	0
S. Liberty	1	107	0	0	1	0
Spurger	1	282	0	0	0	2
Sheridan	1	480	0	0	1	0
Spindletop	1	0	1	0	0	0
South Cotton Lake	2	206	0	0	1	2
N. Texana	1	18	0	0	0	0
Thompson	9	2,888	0	0	0	5
Tomball	3	361	1	0	0	1
Van Vleck	1	298	0	0	0	1
W. Beaumont	0	0	0	0	0	1
West Ranch	12	4,794	1	0	4	10
W. Columbia	2	444	0	0	1	2
Withers	6	410	0	0	0	4
Miscellaneous	9	0	9	0	4	6
Ttl. July	112	22,995	15	0	29	83
Ttl. June	117	28,686	17	3	25	100
Difference	5	5,691	2	3	4	17

MICHIGAN

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allegan	22	520	15	0	2	24
Arenac	1	0	0	1	3	4
Barry	1	0	1	0	0	0
Bay	0	0	0	0	0	1
Barrien	1	0	1	0	0	0
Calhoun	1	0	1	0	0	1
Cass	1	0	1	0	0	4
Chippewa	0	0	0	0	1	0
Clare	6	100	2	3	1	8
Genesee	0	0	0	0	0	2
Gladwin	4	105	1	0	1	3
Gratiot	0	0	0	0	0	3
Hillsdale	0	0	0	0	0	1
Huron	0	0	0	0	0	1
Ingham	0	0	0	0	1	1
Isabella	8	2,841	1	0	2	10
Jackson	1	0	1	0	0	0
Kalamazoo	0	0	0	0	0	2
Kent	8	717	4	0	1	10
Lake	0	0	0	0	1	0
Lenawee	0	0	0	0	0	3
Mackinac	0	0	0	0	0	1
Manistee	0	0	0	0	0	1
Mecosta	1	0	1	0	0	0
Midland	1	100	0	0	0	3
Missaukee	0	0	0	0	0	3
Monroe	1	0	1	0	0	13
Montcalm	4	0	2	2	0	5
Muskegon	3	0	3	0	0	0
Newaygo	1	0	1	0	0	1
Oakland	0	0	0	0	0	3
Oceana	1	0	1	0	0	0
Ogemaw	0	0	0	0	0	1
Osceola	0	0	0	0	0	1
Otsego	0	0	0	0	1	2
Ottawa	9	740	4	0	2	9
Saginaw	1	0	1	0	0	0
St. Clair	2	0	2	0	0	0
St. Joseph	0	0	0	0	0	3
Shiawassee	2	0	2	0	0	1
Tuscola	1	0	1	0	0	1
Van Buren	11	35	10	0	0	8
Ttl. July	92	5,158	57	6	16	134
Ttl. June	103	9,017	43	5	16	184
Difference	11	3,859	14	1	0	30

ILLINOIS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Ttl.
Adams	0	0	0	0	0	2
Alexander	1	0	1	0	0	0
Bond	4	0	3	1	0	8
Bureau	0	0	0	0	0	1
Clark	2	0	2	0	0	7
Clay	4	0	4	0	0	3
Clinton	58	53,765	19	0	2	38
Coles	3	0	3	0	0	1
Crawford	1	0	1	0	0	5
Cumberland	0	0	0	0	0	5
DeKalb	0	0	0	0	1	0
De Witt	1	0	1	0	0	0
Edgar	1	0	1	0	0	4
Edwards	8	1,791	2	0	2	6
Effingham	1	0	1	0	0	1
Fayette	48	8,910	5	0	4	43
Ford	0	0	0	0	0	1
Fulton	0	0	0	0	0	1
Gallatin	2	120	0	0	0	6
Hamilton	5	642	2	0	1	6
Iroquois	0	0	0	0	0	1
Jackson	0	0	0	0	0	3
Jasper	5	2,744	1	0	1	5
Jefferson	3	161	2	0	0	1
Knox	0	0	0	0	0	1
Lawrence	1	0	1	0	0	7
McDonough	0	0	0	0	0	2
Macoupin	0	0	0	0	0	5
Madison	1	0	1	0	1	2
Marion	83	50,707	8	0	23	104
Massac	1	0	1	0	0	1
Monroe	3	0	3	0	0	2
Montgomery	1	0	1	0	0	6
Peoria	0	0	0	0	0	1
Perry	0	0	0	0	1	2
Pope	0	0	0	0	0	1
Randolph	0	0	0	0	0	4
Richland	7	2,628	0	0	5	11
St. Clair	2	0	2	0	0	1
Saline	0	0	0	0	0	3
Shelby	0	0	0	0	0	3
Tazewell	1	0	1	0	0	2
Wabash	17	1,897	6	0	4	15
Washington	10	1,813	2	0	0	11
Wayne	26	9,387	2	0	8	16
White	26	3,746	2	0	6	37
Ttl. July	326	138,311	78	1	59	385
Ttl. June	415	265,912	77	1	77	*407
Difference	89	127,601	1	0	12	22

*Revised.

WYOMING

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Albany	0	0	0	0	0	2
Big Horn	0	0	0	0	0	4
Carbon	0	0	0	0	0	5
Converse	0	0	0	0	1	3
Crook	1	0	1	0	0	1
Fremont	1	0	0	1	0	6
Hot Springs	0	0	0	0	0	3
Lincoln	0	0	0	0	0	3
Natrona	2	225	1	0	1	8
Niobrara	4	4,578	0	0	4	12
Park	0	0	0	0	0	5
Platte	0	0	0	0	0	1
Sublette	3	307	1	0	1	7
Sweetwater	0	0	0	0	0	6
Uinta	0	0	0	0	0	5
Washakie	0	0	0	0	0	1
Weston	2	3	1	0	2	8
Ttl. July	13	5,113	4	1	9	80
Ttl. June	10	4,520	2	0	5	74
Difference	3	593	2	1	4	6

MONTANA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	0	0	0	0	0	1
Blaine	0	0	0	0	0	1
Carbon	0	0	0	0	0	6
Choteau	0	0	0	0	0	1
Fallon	0	0	0	0	3	1
Fergus	0	0	0	0	0	3
Glacier	8	1,024	0	2	3	10
Hill	0	0	0	0	0	1
Petroleum	0	0	0	0	0	2
Pondera	0	0	0	0	0	3
Toole	16	1,311	3	0	0	16
Miscellaneous	0	0	0	0	0	6
Ttl. July	24	2,335	3	2	6	51
Ttl. June	17	697	4	1	14	44
Difference	7	1,638	1	1	8	7

UTAH

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ttl. July	0	0	0	0	3	5
Ttl. June	0	0	0	0	2	5
Difference	0	0	0	0	1	0

COLORADO

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Boulder	0	0	0	0	0	1
Custer	0	0	0	0	0	1
El Paso	0	0	0	0	0	1
Fremont	0	0	0	0	0	2
Garfield	0	0	0	0	1	0
Huerfano	0	0	0	0	0	7
Jackson	0	0	0	0	0	1
La Plata	0	0	0	0	0	1
Larimer	2	19	1	0	0	2
Las Animas	0	0	0	0	0	1
Lincoln	0	0	0	0	0	1
Logan	0	0	0	0	0	1
Moffat	0	0	0	0	1	5
Montezuma	0	0	0	0	0	1
Ouray	0	0	0	0	0	1
Park	0	0	0	0	0	1
Pueblo	0	0	0	0	0	1
Rio Blanco	1	0	1	0	1	3
Routt	0	0	0	0	0	1
Washington	0	0	0	0	0	1
Ttl. July	3	19	2	0	3	33
Ttl. June	1	281	0	0	3	31
Difference	2	262	2	0	0	2

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Personal Paragraphs

EDWIN S. HALL, senior counsel, has been elected vice president of the Standard Oil Co. of New Jersey, principal domestic subsidiary of Standard Oil Co. (New Jersey). Mr. Hall joined the Standard legal department in 1920, became a director in 1934 and has been secretary of American Petroleum Industries Committee since 1932.

BERT BRUSH, drilling superintendent for the Nederlandsche Koloniale Petroleum Mij., Standard-Vacuum operating subsidiary in the Netherland East Indies, completed a record-breaking flight from Batavia, Sumatra, to San Francisco, Calif., last week. He made the journey in 7 days, breaking the record of H. R. (BUD) EKINS, who covered the distance in 8 days on that portion of his trip around the world 3 years ago.

ALLAN W. DOW, formerly of A. W. Dow, Inc., has been appointed consulting technologist for the Asphalt Institute.

J. H. McREADY, geological scout with Kingwood Oil Co., has been transferred from Jackson, Miss., to Knoxville, Tenn.

I. R. CUNNINGHAM, comptroller of the Standard Oil Co. of Venezuela, sailed August 16 on the Grace liner Santa Paula for Caracas, Venezuela.

LEO J. WILMETH has been appointed sales manager of Shamrock Oil & Gas Corp., Amarillo, Tex., coming to his new position from the Grogan Oil Co., Shreveport, La.

F. D. MILLER has been advanced to district agent of Gulf Refining Co. with headquarters in Toledo, Ohio. He succeeds J. T. LAWLESS, who has been advanced to assistant district sales manager.

CARL STEHLE, who was until recently a member of Union Oil Co.'s field staff, has joined the staff of Dominguez Oil Fields Co., now under the personal supervision of HARRIS HAMMOND, who has moved his office from New York to Los Angeles.

WALTER H. MORRISON is now occupying his former position as Oklahoma division manager of production for Shell Oil Co., Inc., at Tulsa. During the absence of REID W. BOND in South America, Mr. Morrison served as Mid-Continent production manager.

ROBERT L. PHILIPPI, director of public relations and advertising for Union Oil Co., Los Angeles, Calif., has been appointed senior director of the Pacific Coast Advertising Clubs and in his new capacity will be in charge of junior departmental activities.

EVERETT N. VAN DUZEE, formerly division manager of production for Shell Oil Co., Inc., at Tulsa, has been made manager of the Louisiana division where he replaces SAMUEL F. BOWLBY. Mr. Bowlby has been transferred to Los Angeles, Calif., where he becomes chief exploitation engineer for the California division of the company. B. DYKSTRA, formerly chief exploitation engineer at Los Angeles, has been transferred to Bogota, Colombia, South America.

BORIS D. VISHANOFF, who has been assistant to the chief geologist of Shell Oil Co., with headquarters in Los Angeles, Calif., was recently transferred as executive assistant in the executive department at San Francisco.

HASSELL O. STARKS, of Bartlesville, Okla., has been appointed manager of the Amarillo, Tex., division of the marketing department of the Phillips Petroleum Co. He succeeds MARK A. TAYLOR, who was a recent victim of an automobile accident.

JOHN S. CORDELL, vice president and general manager of Cities Service Oil Co., headed a party of Cities Service executives who attended a special preview of the new Boston, Mass., headquarters of the company. R. J. HULL, Boston division manager, addressed the guests, numbering more than 200, chiefly from New York.

W. G. GREEN, vice president, Seismograph Service Corp., won a 10-mile race over a windward-leeward course in a regatta held over the week end at the Grand River Dam Lake in northeastern Oklahoma for sailboats of the Snipe class from Oklahoma City, Okla., Tulsa, and Wichita, Kans. In the race over a 6-mile triangular course the next day, when he was two boat lengths in the lead near the finish line, his mast broke because of the high wind and the race was won by JOHN P. HAYWARD, vice president of Barnsdall Research Corp.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

F. Julius Fohs, consulting oil geologist, has finished the work of correlating type logs of the Ponca City, Cushing, Glenn pool, Bartlesville, Morris, and Boynton fields. The logs give the vertical succession of the 24 important oil and gas sands of Oklahoma, representing a vertical range of nearly 5,000 ft. of strata.

Dr. David T. Day, of the Bureau of Mines, announced that a process of manufacturing crude oil had been found, the announcement being hailed as the "final answer to the oil-supply problem." The oil is to be extracted from vegetable substances.

20 YEARS AGO

Declaring that further drilling in the McKeesport, Pennsylvania, gas field would be futile and a waste of money, two stockholders in the McKeesport-Monessen Oil & Gas Co. sought a court order restraining the company from drilling any more wells on its lease.

Standard Oil Co. of New Jersey and affiliates are shipping 2,000,000 bbl. of oil monthly out of Mexico and the company's volume of Mexican business is rapidly increasing, the Wall Street Journal reports.

10 YEARS AGO

Thomas B. Slick, one of the industry's more noted wildcatters and oil producers, died last week in Johns Hopkins Hospital in Baltimore, Md., of a cerebral hemmorhage.

The Ploog pool was opened in Rice County, Kansas, by Shell Petroleum Corp. with a producer estimated good for 5,000 bbl. daily.

A new depth record for the Gulf Coast was established at a Texas Co. test in Acadia Parish, Louisiana, which was abandoned at 8,730 ft.

W. W. RAND, geologist with Shell Oil Co., Inc., has been transferred to Tuscaloosa, Ala.

C. J. JORDAN, petroleum engineer with Continental Oil Co., has moved from Meridian, Miss., to Woodville, Tex.

L. L. DAVIS, Oklahoma Natural Gas Co., Shawnee, Okla., has been appointed manager of the Ardmore district for the company.

C. S. POTTER, superintendent of materials, Lago Petroleum Corp., is returning to Maracaibo, Venezuela, following a visit to this country.

FRANK ANDERSON, of the production department, United British Oilfields, Ltd., is due to sail August 23 for Trinidad after an extended visit in the United States.

E. H. MOORE, New Iberia, La., and T. A. RICHEY, Jennings, La., were elected to the board of directors of the Louisiana Oil Field Carriers Association at a recent meeting.

ZARY TOULA, president of Compagnie Technique des Petroles, of Paris, France, was a passenger on the Pan American Clipper ship which arrived here from Lisbon, Portugal, last week.

MANUEL SANCHEZ CUEN, formerly chief clerk of the Mexican Ministry of National Economy, has been appointed manager of Distribuidora de Petroleos Mexicanos, to succeed JESUS SILVA HERZOG, who resigned August 5.

F. FISCHER REYNOLDS, geophysicist with the Seismic Exploration Co., has let the contract for a new $14,000 residence in Houston, Tex.

PAUL WEAVER, chief geophysicist for Gulf Oil Corp., will be one of the speakers at the Mississippi Oil Exposition at Yazoo City, August 28 and 29.

B. I. ROUTH, formerly in the engineering department of Gulf Oil Corp., at Tulsa, on August 23 will become head of the department of petroleum engineering at the University of New Mexico, Socorro, N. M.

DORSEY STRAITIFF, president of Rocky Mountain Drilling Co., has returned to company headquarters at Los Angeles, Calif., after spending several days inspecting his operations in Wyoming and the Rocky Mountain area.

KARL A. MYGDAL, formerly district geologist for Pure Oil Co. in Wichita Falls, Tex., has been transferred to the company's Fort Worth office where he will have charge of the North Texas and West Central Texas area.

R. E. GRAHAM, formerly in Stanolind Oil & Gas Co.'s Longview, Tex., office, has been transferred to the Fort Worth office where he will assume new duties as assistant division clerk for the Texas Panhandle and East Texas. He succeeds J. G. CROSSKILL who was promoted to head division clerk.

W. D. HENDERSON, geologist for Deep Rock Oil Corp., has been transferred from Tulsa to the Wichita, Kans., office. ROBERT SUTTON, land man for Indian Territory Illuminating Oil Co., at Wichita, has been transferred to company headquarters at Bartlesville, Okla., and promoted to superintendent of the land department.

Heads New Company

R. W. Thomas, who has headed Phillips Petroleum Co. Philgas activities in Detroit since 1931 and who was recently moved to Bartlesville in charge of the company's new special products department, has been elected president of the recently formed Hydrocarbon Chemical & Rubber Co. He will also continue as head of the Philgas department with A. B. Cameron as manager.

R. W. THOMAS

The Hydrocarbon Chemical & Rubber Co., with headquarters at Akron, Ohio, was organized by the Phillips Petroleum Co. and the B. F. Goodrich Co. to manufacture a new synthetic rubber. Facilities for the production of this new product are rapidly being expanded so that samples of materials and detailed technical information relating to military and industrial uses may be put in the hands of prospective users.

After completing 2 years of mechanical engineering study at the University of Illinois in 1916, Mr. Thomas began his business career as construction superintendent for the Aurelius-Thomas Gasoline Co., Drumright, Okla. Four years later he landed a job as construction superintendent for Chestnut & Smith Corp. and was appointed assistant superintendent at Ranger, Tex., in September 1921. He left the Chestnut & Smith Corp. in 1923 to take the position of vice president and general manager for Baltic Gasoline Co.

In 1926, Mr. Thomas went to work for Phillips as construction superintendent at Wetumka, Okla. Five months later he joined the research department as research engineer and within a year was made assistant director of research, which position he held until May 1928, when he was made vice president and general manager of Philgas Co.

K. H. SPOONER has been made district geologist in the Jackson, Miss., office of the Atlantic Refining Co., after transfer from the Houston, Tex., office.

C. H. WRIGHT, president, and F. L. MARTIN, vice president, of Sunray Oil Co., Tulsa, have been inspecting the company's properties in California.

JOE T. KING, president of Kingwood Oil Co. of Effingham, Ill., and formerly of Okmulgee, Okla., Monday was reported resting comfortably at Mayo's hospital in Rochester, Minn., after undergoing an operation.

EDWIN W. PAULEY, president of Petrol Corp., with offices in Los Angeles, Calif., a graduate of University of California in 1923 with a B.S. and a master's degree later, has been appointed a regent of the university by Governor Olson.

H. C. LOVELESS was chosen last week as chairman of the McKean County division of Associated Petroleum Industries of Pennsylvania. Other officers chosen were R. J. CHAMBERLAIN and C. N. PFOHL, vice chairmen, and A. L. DINNINY, secretary.

E. Q. CAMP, Humble Oil & Refining Co., Baytown, Tex., has been appointed member of the American Petroleum Institute committee on corrosion of refinery equipment and committee on disposal of refinery wastes. He succeeds W. R. HICKS on both groups.

JOSEPH AYLWARD, independent operator of Wichita, Kans., is general chairman for Kansas in the forthcoming celebration which will mark the twenty-fifth anniversary of crude-oil discovery at Eldorado. CHARLES S. WARREN, of Bartlesville, Okla., is general chairman for out of state. The celebration is scheduled for September 27.

B. P. BAY, president of Northern Natural Gas Co., Omaha, Neb., was in Amarillo, Tex., last week inspecting the company's facilities in that area.

JOHN G. COCHRAN, Sheffield, Pa., is the new chairman of the Warren County division of the Associated Petroleum Industries of Pennsylvania. W. W. MUIR, of Warren, Pa., is vice chairman and CHARLES H. EATON, also of Warren, is secretary.

ABRAHAM L. RAPHAEL, of New York, Standard Oil Co. of New Jersey chemical engineer, is a member of the jury which will try George Scalise, former union president, on a charge of $60,000 theft of union funds.

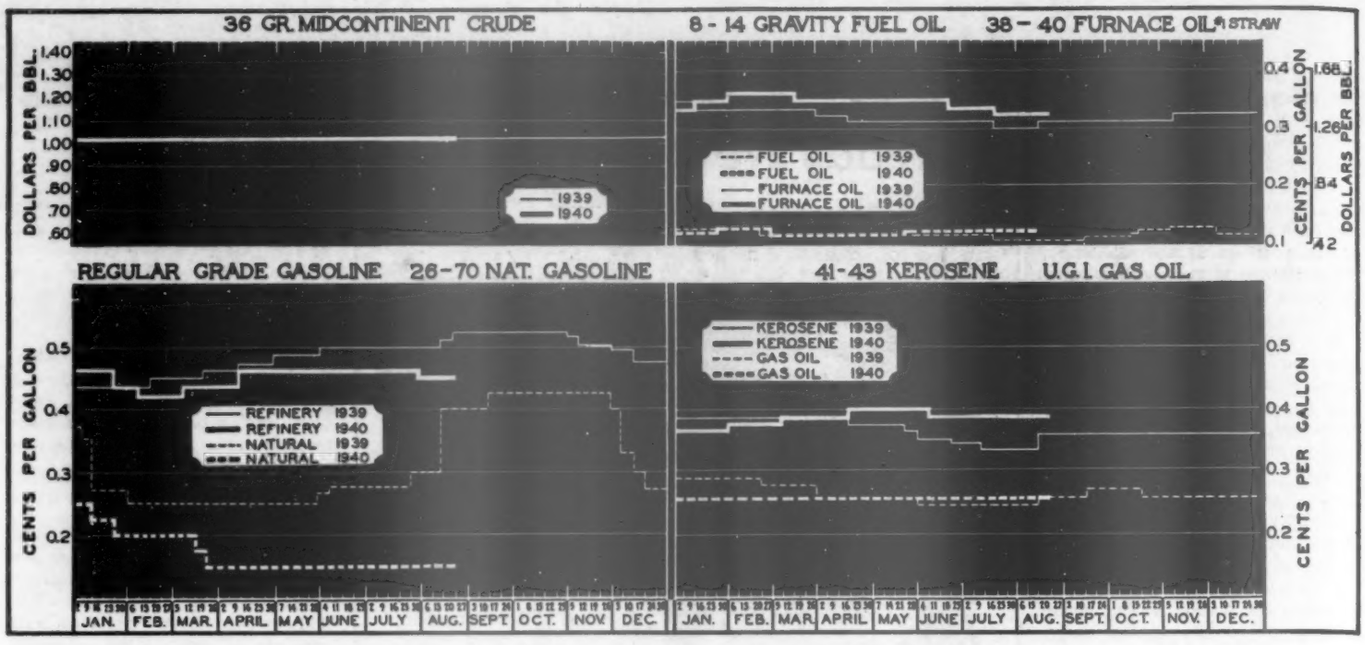
Shifts: KATHERINE RYAN, president, Dolores Oil Corp., from Cleburne, Tex., to Vivian, La.; LOUIS O. STORM, engineer, Shell Oil Co., Inc., from Houston, Tex., to Orange, Tex.; J. B. ROGERSON, superintendent, Atlas Pipe Line Corp., from Shreveport, La., to El Dorado, Ark.; CHARLES T. CONRAD, engineer, Gulf Oil Corp., from Centralia, Ill., to Tulsa; WILLIAM A. CLAIR, engineer, Carter Oil Co., from St. Elmo, Ill., to Tulsa; WILLIAM HOSKINSON, superintendent, Magnolia Petroleum Co., from St. Louis, Okla., to Oklahoma City, Okla.; THOMAS B. SCOTT, JR., manager, Brookhaven Oil Co., from Tulsa, to Long Island, N. Y.; C. A. PETERSON, engineer, Pure Oil Co., from Chicago, Ill., to Jacksonville, Fla.

B. A. HARDEY, Louisiana conservation commissioner, has made six new appointments to the Minerals Division of the state Conservation Department. C. B. SMITHERMAN, Shreveport, La., oil operator, was named manager of the Northwest Louisiana district, succeeding D. B. McCONNELL, who was made director of the Minerals Division several months ago. B. O. DICKERSON, of Minden, was named petroleum engineer and C. B. McEACHERN, Shreveport, junior petroleum engineer. HERBERT WINK, Shreveport, is the new junior field agent and AARON F. PARKER, Monroe, is field agent in that district office. HOWARD L. de la HOUSSAYO, New Orleans, has been named personnel clerk.

CHARLES E. KRAMPF, oil producer in the Bradford, Pa., field, has resigned as president and director of the Penn Valley Crude Oil Corp. and its subsidiary, the Indian Drilling Corp., and will devote all his time to his own interests as a producer. He will be located in Olean, N. Y.

J. T. CORTELYOU, secretary of the Taft chapter of the California Natural Gasoline Association, and a member of the field department of Southern California Gas Co., reports an excellent attendance at the annual barbecue held at Capitola Park August 15 but adds he is glad it is over.

CHARLES HAUENSTEIN, of Iraq Petroleum, informally addressed the regular monthly meeting of the Los Angeles, Calif., Nomads August 14. He discussed the present conditions and the operating methods in the near eastern countries. H. F. CURTIS, who recently returned from Argentina where he had been doing geological work for the Y.P.F. in Patagonia, was also a speaker. He told his hearers of the work done in the unproven areas south and west of Comodoro Rivadavia.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Labor Day Demand Lifts Gasoline Shipments From Inland Plants

By H. STANLEY NORMAN

THE last big push of the summer gasoline-consuming season was in full swing at the start of this week. Refiners throughout the country moved large quantities of motor fuel against contracts and spot orders as all elements in the distribution branch of the industry prepared for Labor Day demand which is certain, unless inclement weather interferes, to exceed the consumption of all previous similar periods.

Gasoline prices in the Group 3 territory are unchanged. Interrefinery buying of gasoline in the Mid-Continent territory, however, indicates that this section is in a stronger statistical position than many of the others.

Competitive Prices Rule

Movement of motor fuel from the Gulf Coast by inland waterways and overland into the territory normally served by Group 3 refiners is exerting pressure on the market. Stocks in the Illinois, Indiana, and Kentucky district which act as a check-valve on northern movement of motor fuel from Group 3 territory are more than ample to meet increased demand in the Middle West.

The record-breaking demand for motor fuel is gratifying to refiners and has prevented the market from yielding more ground pricewise. There is small satisfaction to be found, however, in reviewing the ledger on gasoline business for the summer season. Current prices are unchanged from the past 3 or 4 weeks, excepting on the Gulf Coast and in California. Group 3 refiners are quoting gasoline at 3⅞ to 4⅞ cents per gallon to the tank-car trade, but it is growing necessary to shade price ideas to meet competition from the Gulf.

Depressed condition of the gasoline market and the approaching end of the high-consuming season combine to darken the prospect that crude markets are moving into stronger position. Refiners face the prospect of higher raw-material costs and fuel oils offer the only immediate opportunity of achieving favorable balance on operations.

Inquiries for domestic burning oils are growing in volume daily. Shipments from refineries have increased slightly although there is a distinct inclination on the part of manufacturers to store burning oils for a few weeks until prices respond to demand. Current tank-car fuel prices are being maintained without difficulty. Mid-Continent refiners in a position to sell on the spot fuel-oil market are showing little interest in current inquiries, producing the momentary effect of a stand-off between buyers and sellers.

Refined Oil Market Barometer

Demand for distillate fuel oils continues to expand. The general policy of refiners at the moment is to store light fuels against more urgent inquiries anticipated in the near future. Interrefinery buying of motor fuel is increasing to meet jobber and dealer requirements over the Labor Day week end.

MID-CONTINENT. Refinery gasoline prices dull and unchanged. Intrastate natural market firm.

EAST COAST. Fuel-oil inquiries and movement into distributors' storage reflect approach of consuming season.

GULF COAST. Coastwise shipments of fuels matches dullness of motor-fuel conditions.

CALIFORNIA. Refinery and natural gasolines weak with volume of sales at low level.

CHICAGO. Preparation for Labor Day consumption helps gasoline. Fuels more active.

Demand for kerosene and distillate fuels is reflective of the fall plowing season in the northern states which is now under way as well as the preparation for the heating requirements. Operation of furnaces and space heaters for at least brief periods will start in the middle of September and grow in intensity for duration of the winter.

Intrastate Natural Firm

Intrastate markets for natural gasoline, particularly in Oklahoma and Kansas are stronger than the general Group 3 quotations reflect. Natural-gasoline producers in Texas are still under the depressing influence of dull demand from Gulf Coast refiners. Until Texas natural-gasoline conditions are changed by resumption of normal movement to the Gulf the interstate price structure in Group 3 territory is likely to remain unchanged. Consequently, the Group 3 interstate market ranges from 1¼ cents in Texas to 1½ cents in Oklahoma and Kansas because of freight differentials.

Sales of natural gasoline to local Oklahoma and Kansas refineries have been made in the past few days at a base price of 2 cents for 26-lb. material but freight differentials are entirely responsible for this situation. Residual fuel oils are in firm demand at unchanged prices in the Chicago district. Limited volumes of residual products move from the Mid-Continent and consequently this phase of the petroleum-products market is of only limited importance.

Intimates of the Group 3 market anticipate that light-fuel-oil prices will start upward within the next 2 weeks providing the volume of inquiries follows normal trends. Buyers are interested now in arranging their inventories for early fall requirements are not in urgent need.

Distillate Fuel-Oil Prices Take Firm Position on East Coast

By J. P. O'DONNELL

NEW YORK, Aug. 20.—The influence of excess supplies continued to depress the gasoline market in the northeastern area but the increased weakness in motor fuel was offset by a decided firming in light-fuel oil. Fuel transactions were too few to give a reliable indication of what may be anticipated in the immediate future. Both gasoline and fuel-oil buying continue on an immediate-demand basis.

There were no changes in the tank-car market last week in this area but concessions in both barge prices and in retail markets were reported. While most suppliers continued to quote in a range of from 5¾ to 6¼ cents on material above 65 octane in the New York area, barge-lot quotations as low as 5 cents were reported. Weakness in the retail market is shown by availability of branded gasoline in Connecticut at 8 gallons for $1.

While excess stocks in this district are regarded as the principal cause of the weakness in the gasoline market, continued weakness at the Gulf plus the availability of low-priced transportation are undoubtedly important contributing factors. However, the storage situation enjoyed its best improvement of the year in the week ended August 10.

With East Coast stocks only 430,000 bbl. above the level of a year ago, it is apparent that this district is only a minor contributor to the nation-wide excess of 12,000,000 bbl. Heaviest gains were in the Texas Gulf district. Since the eastern market depends on the Gulf for a large portion of its supplies and since its area overlaps that of the Indiana-Illinois-Kentucky refining district it is evident that unbalanced inventories in those areas would have an adverse effect on the eastern area. These two districts are responsible for more than 60 per cent of the gain in stocks over last year.

Price concessions reported in the previous week apparently removed distress material from the fuel-oil market with consequent firming of prices. Major suppliers continued to ask 4.4 cents for No. 2 fuel oil though previously it was reported that large quantities could be obtained at prices ranging from 4 cents to the top price of the larger companies. Removal of the distress material eliminated the lower prices, however, and while some sales at 4.3 cents were reported late in the week, the bulk of the business was moving at 4.4 cents.

In anticipation of greater fuel-oil demand this fall, eastern district refiners continued to add to storage and will enjoy a much better all-around statistical position this fall than they did a year ago. With shipments of distillate oil burners totaling 148,704 in the first half of this year against 108,862 last year there is ample evidence that fuel-oil demand during the coming winter will reach record proportions.

Bunker C fuel oil also continued to show increasing firmness, chiefly as the result of the strengthening on the Gulf Coast. Two weeks ago Gulf Coast business was reported being done freely at 85 cents per barrel whereas successive reports of 88-cent and 90-cent quotations were heard. Low tanker rates in effect in the Gulf-to-north-of-Hatteras service, however, have tended to soften the full effect of the Gulf Coast improvement in the northeastern market. There was an unconfirmed report current last week also that quantities of imported oil were available in this market at less than generally quoted prices.

Demand for tanker tonnage in coastwise service continued slow last week and it was reported that one fixture had been made at 18 cents, another 1-cent decline from the previous low. This rate applied to dirty tankers while a rate of 19 cents for gasoline was in effect at the close of the week. Other rates reported last week were: Kerosene and Bunker C fuel oil, 20 cents per barrel, and No. 2 fuel oil, 21 cents per barrel. With a large number of tankers tied up and demand for their services at the seasonal low prospects of a rise in tanker rates in the near future appeared highly improbable. The market is so soft at present that owners are reported to be delaying announcement of charters at lower prices in order to protect the market as much as possible. Probable stimulation for coastwise tanker business is seen in the rapid decline in Illinois production which has been supplying a number of refineries formerly dependent on the Gulf for crude.

The seriously depressed crude scale-wax market weakened further in the past week and yellow scale was reported obtainable at 1.9 cents per pound, off 0.01 cent from the previous week. This price compares with a range of 6.75 to 7 cents in effect at the beginning of this year and the comparison shows what a disastrous effect the almost total absence of export demand has had on the market. Suppliers report a fair domestic demand for both crude scale and fully refined grades of wax.

Some improvement was noted in the lubricating-oil market which led observers to the conclusion that the 7-month-old decline in prices has been at last arrested. The principal improvement was in bright stock which has declined 20 cents per gallon since the first of the year.

Neutral oils, most of which are consumed domestically and therefore were less affected by the loss of the export markets, continue to be firmly established at 19 cents for 150-viscosity 25-pour to 21 cents for 200-viscosity 25-pour. First indications of buying for the winter season when light-oil demand reaches its peak were also being

(Continued on Page 119)

Gulf Coast Markets

HOUSTON, Tex., Aug. 20.—No important changes were evident the past week in the general Gulf Coast refinery-market situation. Although movement of gasolines on contract in coastwise trade continued fairly heavy, no new business of consequence has materialized. Quotations, although not regarded as steady, have shown no further weakening.

General inactivity also continued in fuels and burning oils. Whatever firmness existed in prices of these products is attributed to the fact that most suppliers are in fairly good position so far as stocks are concerned, as very little new business is coming in. Inquiries for autumn and winter requirements of eastern consumers which usually start coming in strong about this time of year also are unusually slow. The past week was one of the quietest experienced in these products, and suppliers expressed some concern fearing their inability to hold out until new business arrives.

Expectation of an unusually heavy demand for fuels this winter in view of anticipated record industrial consumption in connection with the Government's preparedness program still is warding off much pessimism, however.

The heavy-fuel market continues to be quoted around 80 cents, with several sellers still asking as much as 85 cents. Kerosene quotations are still hovering around 4 cents, with gas oils from 3¼ to 3½ cents.

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A.P.I. Weekly Refinery Statistics

Week Ended August 17, 1940

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	21,848,000	11,044,000	15,452,000	603,000
Appalachian	91.0	3,428,000	491,000	447,000	121,000
Ind., Ill., and Ky.	90.2	14,576,000	3,429,000	5,108,000	579,000
Okla., Kans., and Mo.	76.9	6,317,000	2,097,000	1,517,000	257,000
Inland Texas	59.6	1,669,000	1,463,000	352,000	119,000
Texas Gulf	85.3	11,664,000	7,408,000	6,760,000	766,000
Louisiana Gulf	97.6	2,710,000	1,637,000	1,108,000	105,000
N. Louisiana and Ark.	51.5	485,000	507,000	288,000	48,000
Rocky Mountains	56.0	999,000	541,000	116,000	60,000
California	87.3	15,735,000	77,133,000	10,056,000	479,000
Total reported	85.3	79,431,000	105,750,000	41,204,000	3,137,000
Est. unreported	.....	7,010,000	2,185,000	1,665,000	373,000
*Est. total	.....	86,441,000	107,935,000	42,869,000	3,510,000
*Est. total previous wk.	.....	88,115,000	107,601,000	41,377,000	3,435,000
*July 18, 1940	.....	75,000,000	115,578,000	36,520,000	3,575,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended August 10, 1940	263,607,000 barrels
Week ended August 3, 1940	264,297,000 barrels
Week ended August 12, 1939	267,536,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of August 20, 1940

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Chicago, Ill.	15.6	13.6	4.5	10.0
Decatur	14.6	13.1	4.5	9.5
Joliet	15.6	14.1	4.5	10.0
Peoria	15.6	13.2	4.5	10.0
Quincy	15.4	13.9	4.5	9.8
Davenport, Ia.	15.6	14.1	4.5	‡10.0
Des Moines	15.4	13.9	4.5	‡9.8
Mason City	15.8	14.3	4.5	‡10.2
Duluth, Minn.	17.4	15.9	5.5	10.8
Mankato	17.0	15.5	5.5	9.0
Minneapolis	17.0	15.2	5.5	10.4
LaCrosse, Wis.	17.0	15.5	5.5	10.4
Green Bay	17.4	15.9	5.5	10.3
Milwaukee	16.8	15.3	5.5	10.2
Detroit, Mich.	14.1	12.6	4.5	7.6
Grand Rapids	13.7	11.7	4.5	9.0
Saginaw	14.7	13.2	4.5	9.3
Evansville, Ind.	17.1	15.6	5.5	†10.5
Indianapolis	17.3	14.8	5.5	†10.2
South Bend	17.3	15.8	5.5	†10.2
Fargo, N. D.	18.2	16.7	5.5	11.6
Huron, S. D.	17.5	16.0	5.5	10.9
Kans. City, Mo.*	14.9	13.4	4.5	8.0
St. Louis*	15.2	13.2	4.5	8.0
St. Joseph	14.9	12.5	4.5	7.9
Wichita, Kans.	13.8	12.1	4.5	7.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective April 18, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents, 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex fuel oil A, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex fuel oil B, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex Bunker C fuel oil, 1-999 gal., 4.25 cents; 1,000 gal. and over, 3.25 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Cons'r tank wag.	Dlvided dlr.	Incl. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Atl'tic City, N. J.	12.1	13.2	4.5	7.7
Newark	12.1	13.2	4.5	7.7
Annapolis, Md.	13.85	14.85	5.5	9.5
Baltimore	13.25	14.25	5.5	8.5
Cumberland	14.65	16.65	5.5	10.0
Wash'gton, D. C.	11.50	12.50	3.5	9.5
Danville, Va.	15.45	17.95	6.5	11.0
Norfolk	14.25	16.75	6.5	10.5
Petersburg	14.55	17.05	6.5	11.2
Richmond	14.55	17.05	6.5	10.5
Roanoke	15.75	18.25	6.5	11.0
Charles'n, W. Va.	15.05	17.55	6.5	12 6
Parkersburg	14.35	15.85	6.5	11.2
Wheeling	15.35	17.25	6.5	11.8
Charlotte, N. C.	17.40	17.50	7.5	11.8
Hickory	17.95	19.45	7.5	12.3
Mt. Airy	17.80	19.30	7.5	12.2
Raleigh	17.15	16.5	7.5	11.5
Salisbury	17.45	16.50	7.5	11.9
Charleston, S. C.	15.25	17.75	7.5	9.75
Columbia	16.10	18.60	7.5	11.5
Spartanburg	16.80	19.30	7.5	12.7

Price basis to Esolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r tank wag.	Net dlr.	Incl. tax	Kero. tank wag.
Atlanta, Ga.	16.0	16.0	7.5	10.0
Augusta	17.5	17.5	7.5	10.0
Macon	17.0	17.0	7.5	9.0
Savannah	16.5	16.5	7.5	9.0
Birmingham, Ala.	17.5	17.5	8.5	9.0
Mobile	17.5	17.5	9.5	8.0
Montgomery	18.5	18.5	9.5	10.0
Jackson, Miss.	16.5	16.5	7.5	9.0
Vicksburg	16.5	16.5	7.5	9.0
Jacksonville, Fla.	14.0	14.0	8.5	8.0
Miami	14.0	14.0	8.5	8.0
Pensacola	17.5	17.5	9.5	8.5
*Tampa	18.5	15.5	8.5	8.0
Lexington, Ky.	14.5	14.5	6.5	9.5
Covington	15.0	15.0	6.5	9.5
Louisville	15.0	15.0	6.5	9.0
Paducah	15.5	15.5	6.5	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

*Temporary discounts to tank-wagon consumers in Tampa 3 cents per gallon below consumer tank-wagon price on Crown gasoline.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Philadelphia, Pa.	12.5	14.0	5.5	10.5
Pittsburgh	13.5	15.0	5.5	10.5
Allentown	13.5	15.0	5.5	10.5
Erie	13.5	15.0	5.5	10.0
*Scranton	12.5	14.25	5.5	10.5
Altoona	13.5	15.5	5.5	10.5
Dover, Del.		14.0	5.5	10.5
Wilmington		14.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank truck	Serv. sta.	Incl. tax	Kero. tank wag.
San Francisco	16.5	17.5	4.5	11.5
Los Angeles	16.0	17.0	4.5	10.0
Fresno, Calif.	17.5	18.5	4.5	12.5
Phoenix, Ariz.	20.5	21.5	6.5	*17.5
Reno, Nev.	19.5	20.5	5.5	13.5
Portland, Ore.	19.0	20.0	6.5	13.5
Seattle, Wash.	19.0	20.0	6.5	13 5
Spokane	20.5	21.5	6.5	16.5
Tacoma	19.0	20.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Albany	11.7	12.5	5.5	7.6
*Met. New York, Manhat., Bronx, Queens, Brklyn., Staten Island	12.0	13.2	5.5	7.9
Buffalo	12.6	13.6	5.5	7.5
Rochester	13.1	14.2	5.5	8.1
Syracuse	13.0	12.8	5.5	8.5
Portland, Me.	11.5	13.5	5.5	7.7
Manchester, N.H.	12.1	13.0	5.5	8.8
Burlington, Vt.	12.4	14.2	5.5	8.2
Boston, Mass.	10.5	11.0	4.5	8.0
Worcester	11.0	11.8	4.5	8.1
Hartford, Conn.	11.0	11.5	4.5	7.5
New Haven	10.9	11.0	4.5	7.0
Providence, R. I.	10.4	11.5	4.5	8.0

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Denver, Colo.	13.5	...	5.5	10.5
Grand Junction	17.5	...	5.5	12.5
Pueblo	15.5	...	5.5	9.0
Casper, Wyo.	16.5	...	5.5	11.5
Cheyenne	14.5	...	5.5	11.0
Billings, Mont.	17.5	...	6.5	11.0
Butte	15.5	...	6.5	13.0
Great Falls	17.5	...	6.5	12.0
Helena	15.5	...	6.5	12.5
Salt Lake, Utah	16.0	...	5.5	14.0
Boise, Idaho	20.6	...	6.5	16.0
Twin Falls	21.6	21.6	6.5	16.5
Albu'que, N. M.	16.0	...	6.5	9.5
Roswell	14.0	14.0	7.0	8.0
Santa Fe	17.0	...	7.0	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
New Orleans, La.	14.25	16.75	8.5	†11.0
Baton Rouge	15.25	17.75	8.5	‡10.5
Alexandria	15.25	17.75	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.25	17.75	8.5	‡10.0
Shreveport	14.00	16.50	8.5	‡9.0
Knoxville, Tenn.	18.50	20.00	8.5	12.5
Memphis	16.50	18.00	8.5	11.0
Chattanooga	18.00	15.75	8.5	12.0
Nashville	17.50	18.0	8.5	11.5
Bristol	18.75	18.00	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Incl. tax.	Kero. tank wag.
Texarkana, Ark.	13.5	5.5	7.0
Fort Smith	15.0	5.5	8.0
Little Rock	17.25	8.0	8.0
Muskogee, Okla.	13.0	5.5	7.0
Oklahoma City	11.5	5.5	6.5
Tulsa	12.5	5.5	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Omaha	17.0	15.9	6.5	9.0
McCook	17.5	14.4	6.5	9.5
Norfolk	17.5	15.4	6.5	9.9
North Platte	17.8	15.0	6.5	10.2
Scottsbluff	18.4	15.5	6.5	10.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.9

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Incl. tax.	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.0	8.0	16.5
Hamilton, Ont.	24.0	8.0	16.5
Winnipeg, Man.	27.0	7.0	21.5
Brandon, Man.	28.0	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Indiana) advanced the dealer gasoline price at Minneapolis, Wis., 1.2 cents per gallon August 9. The company announced that on September 1 Minnesota dealer and consumer motor-fuel prices will be lowered 1 cent because of expiration of an emergency tax of that amount.

Subnormal tank-wagon prices on regular gasoline to both dealers and consumers in Kansas and Missouri, except in the St. Louis metropolitan area, were advanced August 21 by Standard Oil Co. of Indiana in amounts ranging up to 0.05 cent per gallon. The advance will be 0.05 cent per gallon or to normal if the subnormalcy is less than 0.05 cent per gallon. There was no change in the tank-wagon prices of third grade or premium grades of gasoline.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of August 20, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04⅝
63-66 octane	.04	.04¼
60 octane and below	.03½	.03⅝
60-62 400 grades:		
72-74 octane (regular)	.04½	.04⅝
63-66 octane	.04	.04¼
60 octane and below	.03½	.03⅝

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04⅝
63-66 octane	.04	.04¼
60 octane and below	.03½	.03⅞
60-62 400	.03½	.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.05
63-66 octane	.04¼	.04½
60 octane and below	.03¾	.04⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.06¼	.07¼
54-58 U. S. Motor	.05	.06½

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.05¾	.06½
Philadelphia	.06¼	.06½
Boston	.05¾	.06
Baltimore	.06¼	.07
Charleston, S. C.	.06¼	.07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.04½	.04¼
70-72 octane	.04	.04¼
68-70 octane	.03⅞	.04
65-67 octane	.03¾	.04

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.01⅛
Grade 18-55	.01¾	.01⅞

NORTH TEXAS—

Grade 26-70		.01¼
Grade 18-55		.01⅛

CALIFORNIA—

75-85 375-390	.04½	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.01¾

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03½	.03¾
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.03⅝	.03¾
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.03⅞	.04
41-43	.03¾	.03⅞

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

46	.04⅞	.05
45	.04⅝	.04⅞

CHICAGO (Based on Group 3)—

42-44	.04	.04⅛
41-43	.03⅞	.04

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43		.051

GULF COAST (domestic)*—

41-43	.04	.04½

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½	.03⅝
No. 1 prime white, 38-42	.03¼	.03⅝
No. 1 straw, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3 zero to 10, 28-32	.03⅛	.03¼

NORTH TEXAS—

No. 1 prime white, 38-42		.03½
No. 1 straw, 38-40		.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.02⅞	.03

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03⅛	.03¼

NEW YORK (Bayonne, N. J.)—

*No. 1		.051
*No. 2		.044
*No. 4		.044

Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02⅞
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02⅞
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-14	.60	.70
No. 6, 15 and above, 10-16	.45	.55

PENNSYLVANIA (inland refineries)—

36-40	.04	.04½

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.65	.90
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.50	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03⅜	.03¾
43-47 diesel	.03⅛	.03⅜
48-52 diesel	.03¼	.03⅜
53-57 diesel	.03¼	.03¾
58-and-above diesel	.03¾	.04
Diesel bunkers		1.50
Bunker C (bulk cargoes)	.85	.90
Bunker C (bunkers)	.80	.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.044
28-30 diesel (lighterage 6¾c per bbl.)	1.80	1.85
28-30 diesel (tank cars)		.044
Bunker C (to ocean-going ships in N. Y. Harbor)		1.25
Industrial fuel (tank cars)	.033	.035

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25		.18
150-160 D, 0-10		.14
150-160 D, 10-25		.13½
100-110 D, 0-10		.13½
100-110 D, 10-25		.13
Steam refined:		
600 dark green (untreated)		.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point	.14½	.15
15 pour point	.13½	.14
25 pour point	.12	.14
Steam refined:		
600	.08	.09
650	.09	.10
600 flash	.10	.11
630 flash	.12	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.08
180-3		.09
200-3		.09½
250-3		.10½
280-3		.11
280-4		.10½
300-3½		.11⅛
350-3½		.12
400-3½		.12⅛
500-3½		.13
600-3½		.13½
100-2½ paraffin oil, 10-25		.05¼
10-25 pour point:		
200-3		.09
250-3		.10
280-3		.10⅛
280-4		.10

GULF COAST—

Pale oils:		
Pale oils:		
100-3	.05¼	.05¼
200-3	.07¼	.07¼
300-3	.07½	.07¾
500-3½	.08¼	.08½
750-3½	.08⅝	.08¾
1,200-3½	.08¾	.08⅞
2,000-4		.09
3,000-4		.10½
Red oils:		
200-5-6	.06¾	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08¼
750	.08⅝	.08½
1,200-5-6	.08½	.08⅝

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11⅛
400-5-6	.09¼	.11⅞
450-5-6	.09¼	.11⅛
500-5-6	.09¼	.11⅛
600-5-6½	.09¼	.11⅛
700-6½ plus	.09¼	.11⅛
750-6½ plus	.09¼	.11⅛
900-6½ plus	.09¼	.11⅛

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash.		
Zero pour point		.22½
10 pour point		.21½
15 pour point		.20¼
25 pour point	.19	.20
200 vis. at 70° F., 3 color:		
Zero pour point		.24½
10 pour point		.23½
15 pour point		.22½
25 pour point	.21	.22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.02½	.03

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.02	0.2½
124-126 (A.m.p.) w.c. scale	.02	0.2½

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p.) wax	.0560	.0570
130-132 (A.m.p.) wax	.0580	.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.	.02	.02¼
124-126 (A.m.p.) y.s.	.01⅞	.02
Petrolatum in barrels, carload lots:		
Dark green	.02125	.02625
Amber	.02375	.02875
Extra amber	.02625	.03000
Lily white	.04375	.05125
Snow white	.05125	.06000
Cream	.03375	.04125

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.04
60-62 400	.04	.04½
61-63 390	.04	.04¼
64-66 375	.04	.04¼

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.06¼	.06½
65-69 octane	.05¾	.06¼
60-65 octane	.05¼	.05⅝

KEROSENE

GULF COAST—

41-43 water white		.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered		.16
630 S.R. unfiltered		.18
600 flash, S.R.		.19
650 flash, S.R.		.21
Bright stock:		
Light, 25 pour point		.22

NEUTRAL OIL

200-3 color		.27
150-3 color		.25

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125	A.m.p.	.05250	.05600
125-127	A.m.p.	.05375	.05600
128-130	A.m.p.	.05600	.05875
133-135	A.m.p.	.06150	.06250
135-137	A.m.p.	.06400	.06500
Crude scale:			
124-126	w.s.	.02	.02¼
124-126	y.s.	.01⅞	.02

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended Aug. 17 High	Week ended Aug. 17 Low	Week ended Aug. 17 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
58½	38½	43	42⅝	43	Amerada Corp.	788,675	N.P.	50cQ	7-31-40	$2.00	$1.56	$2.07	74½	50	78	55
27⅛	18¼	23	21½	21½	Atlantic Refining	2,663,999	$25	25cQ	6-15-40	1.00	1.66	1.40	24¾	18⅛	27⅝	17⅝
16⅝	8½	9½	9½	9½	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.25	1.39	—.85	21	10¼	23¾	12⅛
13⅜	7⅛	8½	7⅞	8	Barnsdall Oil Co.	2,558,779	$5	15c	9-9-40	.90	.76	1.26	19½	11⅛	21⅜	10⅛
8⅛	5½	6⅛	6	6⅛	Consolidated Oil Corp.	13,751,726	N.P.	20cQ	8-15-40	.80	.55	.55	9⅞	6½	10¾	7
25	16⅛	18⅛	17⅝	17¾	Continental Oil of Delaware	4,682,572	$5	25cQ	9-30-40	1.00	1.35	1.10	31½	19⅞	35¾	21¼
6⅞	3⅜	3⅜	3½	3½	Houston Oil	1,098,618	$25	..	10-17-30	....	.43	.83	9⅜	4½	9¾	5
14⅜	9	10¼	9¾	9¾	Lion Oil Refining	435,815	N.P.	25cQ	7-15-40	1.00	1.50	2.09	18⅛	10	25⅛	15⅝
17⅞	11½	12⅞	12⅜	12½	Mid-Continent Petroleum	1,857,912	$10	40c	6-1-40	.60	1.42	.56	18	11⅛	22⅝	12¼
11	7⅛	8	8	8	Mission Corporation	1,378,645	$10	40c	12-15-39	.65	.87	1.04	14⅞	8⅜	17¾	10⅝
9¾	4⅝	5⅝	5¼	5⅝	National Supply	1,155,517	$10	....	12-22-37	....	—.87	—.79	15½	5⅝	23	12½
8¾	5⅜	6¼	6	6	Ohio Oil Co.	6,563,377	N.P.	20c	6-15-40	....	—.10	.25	10½	6	14⅞	8⅞
8¼	5⅝	5⅞	5⅞	5⅞	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	.81	1.22	11⅞	7	15⅞	10¼
10	6¾	7⅝	7⅜	7⅜	Pan American Pet. Trans.	4,702,945	$5	....	12-31-37	....	1.10	.08	8⅜	5	9¼	6¼
41¾	21⅞	33	32	32	Phillips Petroleum	4,449,052	N.P.	50cQ	8-31-40	2.00	2.21	2.03	46½	31¼	44⅜	27¼
22¾	15	16¾	16	16½	Plymouth Oil Co.	1,038,633	$5	35cQ	6-28-40	§1.40	2.38	2.59	24	17⅛	25⅝	15
11½	7	7⅝	7⅛	7¼	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	1.11	.38	11¾	6⅛	13½	8¼
8⅜	5⅞	8	7⅞	8	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.65	.51	10¼	6⅝	9⅞	5
20	11	13	12½	12½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-14-40	1.00	1.40	1.52	24⅜	15½	27½	15½
13⅛	7⅝	8½	8	8	Shell Union Oil	13,070,625	N.P.	25c	7-16-40	.50	.77	.72	17¼	9⅞	18⅜	10
23¼	12¼	15	14⅛	14⅛	Skelly Oil	995,349	$15	25c	8-28-40	.75	1.99	2.27	29½	15½	34⅝	18½
12½	7⅛	8¾	8½	8⅝	Socony-Vacuum	31,206,071	$15	25cSA	3-15-40	.50	1.10	1.29	15⅛	10¼	16⅜	10⅝
26⅛	17⅜	18⅜	17½	18	Standard Oil of California	13,003,953	N.P.	25cQ	9-16-40	1.10	1.38	2.22	33⅝	24¼	34⅞	25⅛
29	20¾	25¾	24½	24⅞	Standard Oil (Indiana)	15,272,020	$25	25c	6-15-40	1.25	2.23	1.82	30	22¾	35½	24⅝
46½	29⅞	34¼	33	34	Standard Oil of New Jersey	27,280,998	$25	1.00†	6-15-40	1.25	3.26	2.86	53½	38	58⅜	39⅜
65⅞	46¾	48	47¼	48	Sun Oil	2,434,863	N.P.	25c*	6-15-40	1.00	2.74	1.07	66	45¾	65⅛	45
2½	1¼	1⅜	1¼	1¼	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.04	.24	3⅝	1⅜	4¼	1⅜
47⅝	33	36¼	34	34½	Texas Corp.	10,876,139	$25	50cQ	7-1-40	2.00	3.02	2.13	50¾	32½	49⅝	32⅝
4¼	2½	3	2⅝	2⅝	Texas Gulf Producing Co.	888,146	N.P.	10c	6-15-40	.20	.69	.86	5⅜	3¼	5⅞	2⅝
8⅝	5½	6	5⅞	6	Texas Pacific Coal & Oil	888,236	$10	10c	9-3-40	.40	1.00	1.16	11⅜	7	12½	7
12	8¾	9⅛	9	9	Tide Water Associated	6,371,827	$10	15c	9-3-40	.80	1.05	1.28	14¼	9½	15¾	10⅛
17½	12	12⅝	12⅛	12¼	Union Oil Co. of California	4,666,270	$25	25c	8-10-40	1.05	1.25	1.47	19⅜	15⅛	22½	17⅛
29⅞	22¾	25½	25	25	Union Tank Car Co.	1,177,381	N.P.	45c	6-1-40	1.30	2.07	1.16	24¼	20⅛	23½	20
3⅝	1⅞	2	2	2	Wilcox Oil & Gas	470,768	$5	10c	2-15-40	....	.77	.52	4¼	2⅜	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1⅛ per cent in stock. —Deficit

New York Curb Exchange

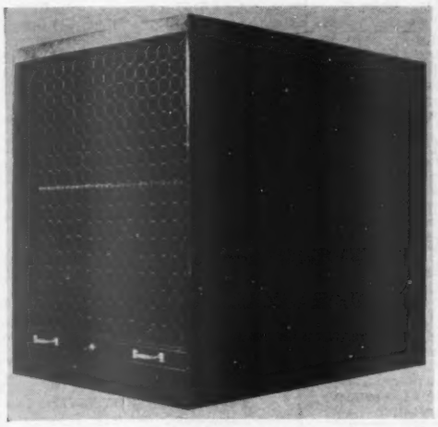
1940 High	1940 Low	Week ended Aug. 17 High	Week ended Aug. 17 Low	Week ended Aug. 17 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1939	Com. sh. earn. 1938	1939 High	1939 Low	1938 High	1938 Low
10¾	4½	4⅞	4½	4¾	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	$0.14	—.22	11¾	5½	11¾	5
3¼	1⅜	1⅜	1⅜	1⅜	Bridgeport Machine Co.	263,700	N.P.	$1.25	12-30-37	....	—.95	—.14	7¼	2½	10¼	4⅞
43	28	37½	37	37	Buckeye Pipe Line Co.	200,000	$50	$1	9-14-40	$2.50	3.13	2.36	34¾	26½	39	22½
117	95	99	96½	96½	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-24-40	6.00	7.87	5.32	130	108⅝	128	97
6¾	4	6	5⅝	5¾	Cities Service (new)	3,703,978	$10	...	6-1-32	....	.68	.23	9¼	4⅛	11	5⅛
2⅛	1	1¼	1¼	1¼	Cosden Petroleum	465,332	$1	....	....	....	....	....	2¼	½	2⅜	⅞
24¼	12½	13	12½	12⅞	Creole Petroleum	6,974,356	$5	50cSA†	6-15-40	1.00	1.38	1.64	28	16⅜	27½	17½
4⅜	2⅞	..	..	..	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	.03	.69	7⅛	3⅜	10¼	5½
2	1¼	..	..	..	Derby Oil & Refining	263,162	N.P.	...	.....	....	—.37	—.91	2⅝	1½	3½	1½
31	23	..	..	..	Eureka Pipe Line	50,000	$50	50c	8-1-40	2.00	.63	—.37	23	15⅛	31	16
39⅞	25⅛	29⅝	27½	27½	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-40	2.00	1.69	1.43	45⅛	29¼	46⅞	33
68	47⅛	52½	50¾	50¾	Humble Oil & Refining	8,987,840	N.P.	62½c	7-1-40	2.00	3.33	3.98	71	52½	72⅝	56
12⅜	5½	6⅜	6¼	6½	Imperial Oil of Canada	26,965,078	N.P.	37½c†	6-1-40	1.00	.71	.96	17	11⅜	19½	14⅛
4⅛	3½	3½	3½	3½	Indiana Pipe Line	300,000	$7.50	10c	5-15-40	.50	.33	.47	7¼	5½	9⅜	6
19¾	8¼	9⅞	9⅛	9¼	International Petroleum	14,324,088	N.P.	75c	6-1-40	1.75	1.19	1.98	27½	17	31¼	21
2⅜	1⅝	..	..	..	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	...	.06	.14	3¾	2⅛	5	2⅛
10¾	7⅝	9⅛	8⅝	9	Lone Star Gas	5,518,347	N.P.	20c	7-22-40	.70	.98	.88	10½	7⅛	10⅜	6⅝
6¼	3¾	4⅝	4⅜	4⅝	Louisiana Land & Exp.	2,966,762	$1	10c	6-15-40	.35	.22	.45	7⅜	4	9⅜	6½
17	10	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	7-10-40	1.00	1.52	2.28	17	14½	24	16
8½	6½	6¾	6½	6½	Midwest Oil Co.	998,474	$10	45c	6-15-40	.90	.99	.93	8¾	6⅝	9¾	6⅝
6¼	4⅞	5⅛	5	5	Mountain Producers	1,593,584	$10	30cSA	6-15-40	.60	.70	.62	6	4⅞	5⅜	4½
13⅛	10	10⅜	10⅛	10½	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-40	1.00	.95	.84	14	11¼	14⅝	11½
12½	8¾	9¼	9	9¼	National Transit	509,000	$12.50	50c	6-15-40	.85	.91	.88	9½	7¼	9¼	6½
1¼	¾	⅞	⅞	⅞	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	..	.02	.02	1⅜	1	2⅝	1½
7¾	5¼	..	..	..	New York Transit	100,000	$5	25c	4-15-40	.40	.88	.16	6	4	4½	3½
9⅞	6	6½	6½	6½	Northern Pipe Line	120,000	$10	40c	6-1-40	.30	.31	.24	7	4½	6	4
5½	2½	3	3	3	Pantepec Oil	2,856,872	$1	....	....	....	....	....	7⅝	4	7¾	3½
3¼	1¼	1½	1¼	1¼	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.70	.17	5	1¼	4½	1⅝
2½	1½	..	..	..	Ryan Consolidated	298,931	N.P.	...	.....	....	.16	.29	3	1⅞	4	2⅛
11⅜	4⅞	6¾	6¾	6¾	Southern Pipe Line	100,000	$10	25c	9-3-40	.30	.25	—.27	4⅞	3½	5⅜	3¼
44	28	32	32	32	South Penn Oil	1,000,000	$25	37½c	6-28-40	3.00	2.84	1.44	40½	26¾	39	28¾
35	22	22⅞	22⅞	22⅞	Southwest Penna. Pipe Lines	35,000	$50	50c	7-1-40	2.00	2.06	—.41	23	18	22½	16½
20⅞	16½	18¼	18	18	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-40	1.30	1.53	1.45	20⅛	17¼	18⅜	15
41⅜	26¼	35	32¼	32¼	Standard Oil of Ohio	753,740	$25	25c	6-15-40	1.50	6.64	1.81	32¾	17	22¾	16⅛
2	1⅜	1½	1⅜	1⅜	Sunray Oil	1,975,876	$1	5c	5-1-40	.10	.25	.23	2⅜	1⅜	3¼	2
2¾	2	2⅜	2⅜	2⅜	Texon Oil & Land	936,024	$2	10c	6-28-40	.10	.49	.56	4	2⅜	5¼	3½
3⅜	2	..	..	..	Transwestern Oil Co.	750,000	$10	....	....	....	—1.42	—.12	6	2½	7⅝	4⅛
2⅛	‖	1¼	1	1⅛	United Gas Corp.	7,818,959	$1	....	.....	....	—.55	—.51	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

EQUIPMENT PROGRESS...

Low-Cost Horizontal Tube Filing Solved

The problem of economic horizontal tube filing for small and large filing systems was recently attacked by F. W. Robson and J. A. Gerson, of Tulsa, engineers



of long experience in the study of filing and protection of rolls. Fundamental requirements were analyzed and these two men now present the "Cabtoob." The 22-gage steel cabinet with roll-a-way door and lock, contains 255 2-in. tubes in a width of 32 in. by a height of 42 in., in varying depths for 24-in., 36-in., 42-in., and 54-in. rolls. Coordinated index is a part of the complete unit.

The "double-header" or utility Cabtoob contains 255 2 by 54-in. tubes with coordinated indexes and roll-a-way door on each end for filing 54-in. rolls plus odd lengths from either end. Larger diameter tubes can be installed in the units. All Cabtoobs except the "double header" may be set on end and used as a vertical file.

Messrs. Robson and Gerson state that the Cabtoob preserves tracings, films, prints, drawings, and maps; conserves space, is easily accessible, saves time, is dustproof, verminproof, burglarproof, and lasts indefinitely. Units may be placed in rows or stacked on top of each other. The fact that the Cabtoob is fire resistant practically eliminates the necessity for vaults.

Graver Tank Announces Addition Of General Construction Division

Graver Tank & Manufacturing Co., Inc., East Chicago, Ind., has formed a division for the purpose of construction of equipment and other facilities for the petroleum industry, and which has been in active operation on work for major oil companies since January 1940. In discussing this new service, E. N. Gosselin, president, stated, "Due to the increasing trend of oil companies to avoid fluctuating forces as much as possible, they are placing their construction work with experienced contractors qualified to secure the best results, and Graver believes that its construction division can, and will be of definite value to the petroleum industry as a whole.

LLOYD K. WELLS

"The activities of this new division, organized as a separate erecting department, will be confined to construction work only and will work from plans and specifications furnished by the customer, but will do no engineering or designing. This policy, we believe, will tend to effect greater economies in the construction of petroleum equipment and other facilities, and will enable the oil companies to relieve themselves of all worry and trouble attendant with handling construction projects."

Lloyd K. Wells, prominent construction engineer, for many years identified with erecting of all kinds of refinery equipment and other facilities, is manager of this division. From 1922 to 1940 Mr. Wells held responsible positions as construction engineer, foreman, superintendent, and general construction superintendent in the erection of all types of equipment and construction, and is well known in the industry.

The Graver construction division, under the competent direction of Mr. Wells, is equipped with all the necessary tools, erecting equipment, and personnel to adequately assure precise and speedy construction of equipment and other facilities to suit the requirements of the petroleum industry.

Morian and Sutherlin Promoted by Dowell

In a move to cooperate more closely with the Gulf Coast friends and customers of Dowell, Inc., Stanley C. Morian, formerly district engineer at Houston,

STANLEY C. MORIAN

JACK SUTHERLIN

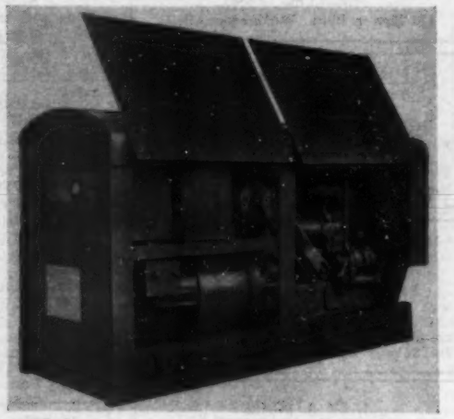
has been promoted to sales manager attached to the general sales staff. Mr. Morian will maintain his residence at Houston with business offices in the new Commerce Building. Born and bred to the oil industry, he is the third generation in his family to be associated in production. Mr. Morian took his B.S. degree in petroleum engineering at the University of Oklahoma in 1934 and upon graduation became associated with the Gulf Oil Corp., in whose employ he held positions varying from field clerk to production engineer at Hobbs, N. M. In April 1937 Mr. Morian joined Dowell in its West Texas operations. He has been located for the past 2 years on the Gulf Coast with the special assignment of studying chemical service problems in the area.

Jack Sutherlin, until recently a station manager for Dowell at Great Bend, Kans., has been promoted to a research engineering post with headquarters in the Tulsa general offices of the company. He was born in Texas and has been associated with the oil industry since leaving Texas A. & M. where he majored in geology. Upon leaving school, Mr. Sutherlin was employed by Cabot Co. in the technical department. In the 5 years of his association with Dowell, Inc., he has spent most of his time in the western Kansas oil fields, having left only for periodic training in other areas.

Reagin E. Dublin has been transferred from Hays, Kans., to Great Bend as station manager for Dowell, Inc. Jack Sampson succeeds Mr. Dublin at Hays as station manager. He was promoted from his treating engineer's post at Great Bend.

New Lincoln Diesel Arc Welder Equipped for Gasoline Starting

The application of gasoline-engine starting on diesel-driven arc welders, announced previously on a 300-amp. unit by the Lincoln Electric Co., Cleveland, Ohio,



has been further extended and is now available on a 400-amp. model. (See illustration.). This advance makes available easy starting in any weather and the inherent economies of diesel drive in the many applications for engine-driven welders of capacities up to 400 amp.

According to field reports, the diesel welder cuts fuel costs 33 to 86 per cent. Total savings run as high as 40 cents per hour. Fuel-oil consumption is 1.5 gal. per hour at full-load operation compared with 2.75 gal. of gasoline with conventional engine-driven welders. In addition to its operating economy, the diesel engine compares favorably with gasoline engines in simplicity, weight, and cost, as well as operating speed.

The gasoline-starting engine is a small auxiliary mounted above the diesel. It is started by means of a hand crank. A belt drive, engaged by means of a clutch, connects the starting engine to the diesel. Starting in extremely cold weather is facilitated by having the cooling system of the small starting engine connected into the cooling system of the diesel engine. This permits warming up the diesel by running the starting engine a short time and allowing the heated water to circulate through the diesel engine.

Of 400-amp. capacity, the "Shield Arc S.A.E." arc-welding generator used on the new diesel welder is equipped with "dual continuous control" and all of the other advanced Lincoln features. "Dual continuous control," by permitting independent adjustment of both voltage and current, provides a welding arc of just the right type and intensity for all applications of arc welding. Ability to make adjustments in very fine increments, enables the user to obtain literally thousands of current settings. This feature assures fastest and most economical production of highest quality welds under all conditions.

Bethlehem Opens New Stores At LeWard and Seminole

Bethlehem Supply Co., Tulsa, has opened two new stores in Texas, one at LeWard and the other at Seminole. J. M. Woods is store manager of the LeWard store; J. L. Morgan, assistant store manager; J. P. Branch, field salesman; John A. Rich, floorman. J. W. Stewart is store manager at Seminole; Virgil Moon, assistant store manager; and W. M. Vandivert, field salesman. The LeWard store is under the direct supervision of R. A. Brown, district manager with headquarters at Corpus Christi, while the Seminole store is under R. E. Throckmorton at Midland.

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Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas; 2014 Second Nat'l Bank Bldg., Houston. 506 Aztec Building, San Antonio, Tex., 457 Munsey Building, Washington, D. C. Address any of these offices.

Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

BROKERS and SALESMEN

A complete SERVICE. EXPERTS in every department of the Oil Business at your SERVICE; a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
WHOLESALE PRICES
Write today and get started right.
OIL BROKERS EXCHANGE
Santa Fe, New Mexico

CRANE CO., oil possibilities, cheap fee land, 3 mi. E Ward Gulf-Western drilling. J. G. Smith, 215 Littlefield Building, Austin, Texas.

SPECIALIZED Geophysical investigations conducted for petroleum promise. In touch with many opportunities to and for development of drilling blocks. P. O. Box 364, Fort Worth, Texas.

MINING CREEDE COLORADO
Are you interested in mining then write Norman Alspaugh, Creede, Colorado, and learn what the famous oil mining camp of Creede has to offer in the mining industry.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

IN MY Opinion, young pine-timbered acreage (well located, soil suitable for agriculture, and with oil and mineral rights intact) offer a most favorable investment opportunity. I am in good position on sizable tracts and invite contacts with interested parties. EDGAR C. ARLEDGE, Crockett, Texas.

MOONEY well tested 900,000 cu. ft. Drilling 7 wells, 280 acres, pipelines in. contract for gas 8c per 1000 cu. ft. ⅛th. per 40 acres, 1 well—$112.50 maps, information.
BOX 382, OSAWATOMIE, KANSAS.

Leases and Drilling Blocks

EAST Texas oil leases. $2.00 acre. Nearest and large Co. holdings. L. Lahm, 2931 Missouri Ave., St. Louis, Missouri.

NEW MEXICO
STATE OIL AND GAS LEASES
40 acres and multiples thereof. In the Hot Spots. Buy direct. Save those dollars. No middle man to pay; no salesman to bother you! Twenty years in the business without a complaint. Write for information.
HARRY S. WRIGHT
New Mexico State Lessee
Wright Bldg., Farmington, New Mexico

CRANE-WARD County 20 ac. cheap in fee, under Magnolia lease. J. G. SMITH, 215 Littlefield Bldg., Austin, Texas.

NEW MEXICO
Oil and Gas Leases and Royalties.
ROY G. BARTON, Hobbs, N. M.

SHOT-HOLE and CORE DRILLING 1,800-ft. hole. Outfit ready for immediate call. Phone 58, Covington, Okla. Box 173.

OPPORTUNITY for you in Bates County, Missouri, well just spudded in. John Eger, Rich Hill, Missouri.

HAVE proven acreage, 5 sands to 1400 ft. checkerboard for drilling or liberal allowance for financial aid. 2540 NW 15, Oklahoma City, Okla.

OIL PRODUCTION or lands, large and small. If in the market to buy or sell we should do some trading. Will offer nothing I will not help buy.
E. B. REEVES
Box 13, Alanreed, Texas.

200 acres—close in to Gulf Co. discovery, 7 miles south of Centralia, Illinois. Want additional finances to deepen well started showing Glen Dean marker even with the new pool at minus 670 as analyzed by Shell Co. Units or full undivided interest offered. H. C. Gass, Belleville, Ill., care Hotel.

TWO GOOD 6000-acre ranches, Erath Co. for sale, good terms. L. L. MORRISON, Dublin, Texas.

WANT partner $5,000 one-half interest proven shallow lease, flood district. Big quick results. No Brokers. 3502 South Peoria, Tulsa, Oklahoma.

Warehouse Facilities

WAREHOUSE space, 1,000 square feet or part, with desk, phone and shipping service.
LARKIN PACKER CO.
Tulsa, Okla.

For Sale—Maps

R. B. ROBINSON MAPS
Jackson, Miss. 3-Hart Bldg., Across Street from Heidelberg Hotel. Ownership maps All Over Mississippi.

1940 OIL AND GAS FIELD MAP
Texas, Eastern New M. Price $1.00.
Wildcat Map $3.00 Published monthly.
ZINGERY OIL MAP CO., Fort Worth, Tex

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

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HOMER L. FITCH, GEOPHYSICIST AND LOCATION ENGINEER
WHY drill dry holes? Our method only locates structures which contain oil or gas. Locations made by us will produce or no pay. Drawer 711, Brownsville, Texas.

MAJORS — INDEPENDENTS — WILDCATTERS—When you drill for Oil and Gas wouldn't you like to be sure? The Gravitational Selector works quickly, scientifically, satisfactorily or there is no charge. If you are satisfied pay us from production. Regardless of how you have located your wells heretofore we believe we can give you additional safeguards ahead of the drill. For particulars write Gravitational Selector, 14957 Lakewood Heights Boulevard, Lakewood, Ohio.

Financing

JOHN MORRIS, Box 5411, Philadelphia, studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

Mailing Lists

ROYALTY owners, Oil investors, Unit holders, Stockholders in Oil and Royalty Companies. Personnel lists of every branch of oil industry. All by States. We buy lists. New catalogues ready. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Legal Blanks

BURKHART'S legal blanks and general forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo. Neb. N. Dak. Tenn. Wyo. Free catalog, samples on request. Burkhart Ptg. & Sta. Co. 115 S. Cinn. Tulsa, Oklahoma.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

PURCHASERS AND DISTRIBUTORS
PRODUCING ROYALTIES
Registered with S. E. C.
INVESTMENT ROYALTIES, LTD.
Ramsey Tower, Oklahoma City, Okla.

Situations Wanted

REFINERY EXECUTIVE thoroughly trained and experienced in design construction and operation of refineries and the manufacture of all products. Efficient, energetic, diplomatic. Desires permanent connection or design construction and operation on partnership basis. Now employed. Box K-675, The Oil and Gas Journal, Tulsa, Oklahoma.

CHIEF chemist with thirteen years experience with major oil company desires technical or operating position with progressive company large or small. Thoroughly familiar with Dubbs and skimming plant operations, stabilization, treatment of gasoline and light fuels, blending of gasolines and heavy fuels. Box K-732, The Oil and Gas Journal, Tulsa, Okla

ACCOUNTANT—Office Manager, 12 yrs. experience in oil industry, 2 yrs. public accounting; capable of handling income tax, Social Security and wage-hour matters. Employed but desires change. Box K-730, The Oil and Gas Journal, Tulsa, Oklahoma.

YOUNG man executive ability refinery pilot plant experience, B.S. Gas Engineering desires job. West Coast or South America. Address Box K-605, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

DESIRE to contact rotary drillers who worked in Wyoming prior to 1929. Address P. O. Box 2603, Tulsa, Oklahoma.

WANTED — Distributor for oil states for new steam-air-oil burner. Address Box 1205, Springfield, Illinois.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, California.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30	7 Lines	$2.45	$4.20	$5.95	$7.70
4 Lines	1.40	2.40	3.40	4.40	8 Lines	2.80	4.80	6.80	8.80
5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
6 Lines	2.10	3.60	5.10	6.60	10 Lines	3.50	6.00	8.50	11.00

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1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FOR SALE

Either or both of these drilling outfits at reasonable price if taken at once.

1—Jumbo D Fort Worth Spudder complete with either diesel or gas drilling unit. Tools from 15-in. to and including 5-in. This outfit now running east of St. Joseph, Mo., in Forest City basin.

1—Wichita Falls 56 Heavy Duty Spudder with or without diesel power unit and tools from 18-in. to 5-in. Now running at Lost Springs, Kans.

ALSO

53 ft.—15-in. 60-lb. Casing.
200 ft.—12-in. 60-lb. Casing.
1,400 ft.—10-in. 45-lb. Casing.
1,500 ft.—8-in. 32-lb. Casing.
2,300 ft.—6⅝-in. 24-lb. Casing.

The Veeder Supply and Development Co.
P.O. Box 270
Cherryvale, Kans.

FOR SALE

One gasoline drilling rig with two 85 H.P. Waukesha motors and unitized draw works complete.

10,000 Ft. 2½" seamless tubing, used in flowing wells only.

10,000 Ft. 7" O.D. 26# seamless casing, once run.

15,000 Ft. 4½" O.D. seamless drill pipe equipped with both regular and full hole tool joints.

In addition to the above we have 20,000 Ft. screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

Wire, Write or Phone for Prices.

Louisiana Iron & Supply Co.
Shreveport, La.

DIESEL ENGINE GENERATOR SETS

3—260 H.P. Buckeye DIESEL Guaranteed 20% overload for 2 hrs. dir. con. 175 kw. G.E. 2200/440/220/3/60 200 r.p.m. AC Generators complete. Good running condition.

DUQUESNE ELECTRIC & MFG. CO.
Pittsburgh, Pa.

REFINERY PRICED FOR QUICK DISPOSAL. 500-barrel topping plant well equipped located Farmington, New Mexico. AMERICAN INDIAN OIL & REFG. CO., Farmington, N. Mex.

FOR SALE—Or will trade for old or discarded material, reconditioned pipe, casing and supplies, for cable tool drilling. Lee Morrison Supply Co., Bartlesville, Okla.—Tulsa Representative, phone 4-3355.

• REFINERY EQUIPMENT • VALVES & FITTINGS • STORAGE TANKS

• PRESSURE VESSELS • PIPE — ALL SIZES

Write Now for Your Copy of Our New Listings

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry and H. J. Galamba
Riverview at Second, Kansas City, Kansas

Robt. W. Duden
2100 S. Union, Tulsa, Oklahoma

45-C STAR SPUDDER priced to sell excellent condition; mounted dual tires; 8 inch "A" Pole Mast PA100 International Engine. Located Butler County, Kansas. P.O. Box 135, Eldorado, Kansas. Phone 208.

FOR SALE: 7 ft. x 20 ft. Butane welded storage tanks 125# WP, capacity 6000 gallons. I.T.I.O. Co., Bartlesville, Okla.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St., Cincinnati, Ohio

FOR SALE

A. P. I. MASTER ROTARY TOOL JOINT GAGES

(Made by Pratt & Whitney Co. and marked with A.P.I. monogram.)

A. P. I. REGULAR ROTARY TAPER JOINT GAGES:—

1—3½"—5 A.P.I. Tool joint female gage #R-4691
1—3½"—5 A.P.I. Tool joint male gage #P-3714
1—4½"—5 A.P.I. Tool joint female gage #R-1962
1—4½"—5 A.P.I. Tool joint male gage #P-1962
1—5⅛"—4 A.P.I. Tool joint female gage #R-2872
1—5⅛"—4 A.P.I. Tool joint male gage #P-2872
1—6⅝"—4 A.P.I. Tool joint female gage #R-2926
1—6⅝"—4 A.P.I. Tool joint male gage #P-3449
1—7⅝"—4 A.P.I. Tool joint female gage #R-4706
1—7⅝"—4 A.P.I. Tool joint male gage #P-4706
1—8⅝"—4 A.P.I. Tool joint female gage #R-1984-1440
1—8⅝"—4 A.P.I. Tool joint male gage #P-2676

A. P. I. FULL HOLE TOOL JOINT GAGES:—

1—3½"—5 (3" T.P.F. Tool joint female gage #R-4544)
1—3½"—5 (3" T.P.F. Tool joint male gage #P-4538)
1—4½"—5 A.P.I. Tool joint female gage #R-5040
1—4½"—5 A.P.I. Tool joint male gage #P-5040
1—5⅛"—4 A.P.I. Tool joint female gage #R-5129
1—5⅛"—4 A.P.I. Tool joint male gage #P-5125
1—6⅝" 4 A.P.I. Tool joint female gage #R-4680
1—6⅝" 4 A.P.I. Tool joint male gage #P-4680
7 pieces—.625" square feeler gages for use with above.

For prices, write

LARKIN PACKER COMPANY, INC., St. Louis, Mo.

FOR SALE

Bargain Prices—Shell Stills, Towers, Pressure Vessels, Coal Handling Equipment, Used and Surplus Equipment—Can be inspected our Coffeyville plant.

THE NATIONAL REFINING Co.
Coffeyville, Kansas

TRACTORS

Caterpillars, crawler type, size "35," $375; size "65" with nigger-head winch $750; Caterpillar RD8 with bulldozer $2000; Allis-Chalmers Model L with bulldozer $1750. Guaranteed, slightly used. O. C. Evans, Mt. Sterling, Ky.

FOR SALE—6,000 ft. 4" reclaimed line pipe, all new threads and couplings; also 1", 1¼", 2", 3", 5", 6", new threads and couplings where needed; pipe from 1" to 4" steam tested. Phone Warren 2171-R or Kane 71.

KANE SUPPLY CO.
Clarendon, Pa.

Equipment Wanted

USED colorimeter, flash point carbon and cold testing equip., electric centrifuge. Box 40, The Inn, Iowa.

Exchange Equipment

WILL trade refinery equipment three 85 HP Hercules Diesel Engines and power plant for model A 401-A pr model J 451-A Podbielniak Manually Operated Low Temperature Fractional Distillation Apparatus, 100 HP and 125 HP Exhaust Steam Turbines, Admiralty metal open condenser sections. Must be in good condition. Box K-740, The Oil and Gas Journal, Tulsa, Oklahoma.

Wanted

WANTED: Competent party for Drilling and Operating Agreement, 480 acres of Federal B land in Twp. 17 S., Range 30 E., N.M.P.M., Eddy County, New Mexico. Address Mrs. Nellie N. Stevens, Las Cruces, New Mexico.

New York Markets

(Continued from Page 113)

felt in the neutral market. The current 19 and 21-cent lows compare with 28 and 31 cents on 150 and 200-viscosity grades at the beginning of the year, evidence of the better resistance of neutrals to the depressing influence which hit other lubricating-oil stocks.

Gasoline continues surprisingly strong in the western Pennsylvania area with 72-73 octane (L-3) quoted at 5.75 and 74-76 at 6 cents, unchanged for several months. Maintenance of better-than-average prices in this area against depressing outside influences insures Pennsylvania refiners of a comparatively good gasoline year.

Gulf Coast Markets

(Continued from Page 113)

Lubricating oils also showed no improvement, with suppliers offering concessions to move material. No further reductions in the general quotations from those of recent weeks have been reported.

Oil Company to Protect Jobs Of Conscripted Employes

Replies to a recent questionnaire on conscription, sent out by Oil Producers Agency to the California oil industry, show that an overwhelming proportion of oil companies will save jobs and seniority of conscripted employes whenever and if at all possible.

While some companies have not yet determined their policies as to conscriptees, of those who have established such policies, 92.5 per cent will save jobs, and 95.1 per cent will preserve seniority rating.

More varied policies, with respect to National Guardsmen called out for a 30-day period were shown. Of the companies with established policies, 45 per cent will make up the deficiency between the guardsman's $21-per-month wage and his regular wage as an employe; 25 per cent will provide half pay during the period; 15 per cent will provide full pay; 15 per cent will provide no pay.

No inquiry has been made as to policy with respect to National Guardsmen in view of the present federal plan to mobilize the guard for a full year, but it may be reasonable to assume that if the proposal becomes law, the company policy as to conscriptees will apply.

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the August 1 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, Louisiana	1.03
Smackover, Arkansas, heavy	.73
Illinois basin	1.05
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	2.00

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

	Signal Hill, California*	Oklahoma, Kansas	Gulf Coast, Texas
14-14.9	$0.65	....	....
15-15.9	.65	....	....
16-16.9	.65	....	....
17-17.9	.65	....	....
18-18.9	.65	....	....
19-19.9	.69	....	$0.86
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.12
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective Feb. 1, 1940.

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